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BUDGET COMMITTEE

(SPECIAL MEETING)

WEDNESDAY, JUNE 4, 2008

AGENDA

1. Call to Order
2. Pledge of Allegiance
3. Adoption of Agenda
4. Public Participation
5. Receive and File Plante & Moran's Final Report for Employee Benefit Consulting Services (mailed)
6. New Business
7. Public Participation
8. Adjournment

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RESOLUTION NO.

FULL BOARD MEETING DATE

AGENDA ITEM

MACOMB COUNTY, MICHIGAN

RESOLUTION TO receive and file Plante & Moran's Final Report for Employee Benefit Consulting Services.

INTRODUCED BY: Commissioner Don Brown
Chairman, Budget Committee

COMMITTEE/MEETING DATE

Special Budget/June 4, 2008



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PRIVATE AND CONFIDENTIAL

May 28, 2008

Mr. Don Brown
Board of Commissioners
Mr. David M. Diegel
Finance Director
Macomb County
10 North Main St.
12th Floor, County Building
Mt. Clemens, MI 48043

Re: Final Report for Employee Benefit Consulting Services

Dear Mr. Brown and Mr. Diegel:

We are complimented by your request that Plante & Moran, PLLC assist Macomb County, Michigan (the County) in evaluating the current and proposed pension plans. This letter summarizes the findings of our study.

Background

The County currently contributes to a defined benefit plan, the Macomb County Employees Retirement System (the Retirement System) for union and nonunion employees that include members of the 1) General County, 2) Sheriff's Department and 3) Road Commission. The Road Commission is not included in any way as part of this proposal or any associated study to be prepared by Plante & Moran.

Benefit Structure

The benefit formula under the Retirement System provides for a monthly benefit at normal retirement age. In general, the benefit structures for the General County employee and the Sheriff's Department employees are:

- Effective January 1, 2002, the formula for General County employees is service multiplied by 2.4% of Final Average Compensation for the first 26 years and 1% thereafter, for a maximum benefit of 65% of Final Average Compensation; for RN's, LPN's and UAW Senior Citizen Services employees, the benefit formula is 2.2% of Final Average Compensation multiplied by total service to a maximum of 66% of Final Average Compensation.
- For the Sheriff's Department, Deputies receive a benefit equal to 2.64% of Final Average Compensation multiplied by service (up to a maximum of 25 years); all others receive a benefit service multiplied by 2.4% for the first 26 years and 1% thereafter for a maximum benefit of 65% of Final Average Compensation.

Benefit Subsidies

Certain subsidized benefits are available from the Retirement System. Early, unreduced monthly benefits are available to participants that meet certain age, service, or age plus service criteria – one example is the Rule of 70, an age plus service subsidy available to early retirees. Additionally, a deferred retirement optional pension (DROP) is available to participants when they first become eligible for an unreduced benefit.

The additional annual County contribution for the benefit subsidies is approximately

- DROP – 0.50% of payroll for General County employees and 0.60% of payroll for Sheriff's Department employees, and
- Rule of 70 – 2.70% of payroll for General County employees.

Retirement System Funding

The average cost per year for Retirement System benefits is approximately

- 17.30% of payroll for General County employees and
- 20.60% for Sheriff's Department employees.

The Retirement System is funded directly through a combination of employee and employer contributions. Member contributions are:

- General County – 3.5% of annual compensation
- General County (RN's, LPN's, and UAW Senior Citizen Services) – 2.5% of annual compensation
- Sheriff's Department – 4.0% of annual compensation

For the actuarial valuation as of December 31, 2006, such amounts in the aggregate approximately average:

- 3.00% of payroll for member contributions (for General County employees) and 11.60% of payroll for the County, and
- 3.80% payroll for member contributions (for Sheriff's Department employees) and 14.70% of payroll for the County.

The Retirement System is funded indirectly through an amortization of assets greater than the unfunded actuarial accrued liability of about 3.10% of payroll for General County employees and 2.30% of payroll for Sheriff's Department employees. Without this indirect funding, the cost for the County would be higher.

Historically, investment earnings and employer contributions have experienced volatility. Further, required employer contributions, as well as distributions, have increased over time. Notwithstanding, as of the most recently available actuarial valuation, the Retirement System continues to be well funded.

Goals of the Study

The County is concerned about many issues with the Retirement System including providing the level of benefits and sustaining the increased contributions on a long-term basis without disrupting services, staffing, and/or requiring increased taxes, that is, the County wishes to provide meaningful benefits to its employees while mitigating volatility and increased costs.

The County is seeking to perform projections of the Retirement System liability.

Further, the County is looking for assistance in understanding the financial and non-financial ramifications of implementing a defined contribution plan and the associated alternatives.

Report Layout

This report is divided into the following sections:

- I. Caveats – The entire process of projecting long-term costs and benefits is based upon the perfect realization of all of the underlying assumptions; therefore, the report cannot be used as a representation of what will occur, but instead, only what would occur, if and only if, all the assumptions are realized – the caveats explain how the report should and should not be used.
- II. Retirement System Analysis – the report provides observation of the projections of the ongoing hard dollar costs of maintaining the defined benefit plan intact in its current form; the report summarizes the work prepared by Gabriel Roeder Smith & Company prepared and sent under cover of May 7, 2008 (see Appendix 1).
- III. Hybrid Plan Analysis – the report looks at effect of funding costs for prospective employees and at providing a combination of defined benefit style benefits and defined contribution style benefits for such prospective employees.
- IV. Subsidized Benefit Costs – based upon information available in the most recently available actuarial valuation (for December 31, 2006) sent under cover of June 27, 2007, the reports provides discussion on cost of providing benefit subsidies for ongoing benefits.
- V. Individual Calculations – sample calculations are provided for long-term, thirty year employees under all the defined benefit style plans that were modeled for costs purposes including the addition of certain defined contribution style benefits. Additionally, a calculation is provided noting the effect of having a pure actuarial reduction for certain early retirement benefits (versus a subsidized, unreduced benefit).
- VI. Conclusion – based on the goals of the County to provide meaningful retirement benefits to its employees while containing increasing costs and the mitigating the associated funding and investment return volatility, Plante & Moran is providing a recommended approach to providing future benefits. Such recommendations should not be considered without looking at the impact on the County's payroll, such as necessary replacement personnel, and its retiree medical obligations.

SECTION I

CAVEATS

Information contained in this report is based upon underlying assumptions and methods 1) directly referenced, 2) referenced in an underlying report, or 3) implied.

The actual results of any outcome based projections based upon assumptions are likely to be different in reality and, as such, should be relied upon as estimates. However, the report does reflect the order of magnitude and direction of the Retirement System should the underlying assumptions be realized or approached.

Projections, and studies based upon projections, are by definition imperfect and limited in use. This study is based on projections.

Report Limitations

- This report is finite in terms of the content it intends to address. It is not intended to be exhaustive.
- This report does not define the universe of potential outcomes, for example, should investments exceed or fall short of the expected outcome.
- This report does not consider the impact on the retiree medical benefits funded outside the Retirement System. This issue may alter the timing and impact of any potential changes to the Retirement System.
- This report does not consider the impact on the County's payroll (if any).
- This report is based upon actuarial calculations and estimates that do not meet the same rigorous standards of ongoing actuarial valuations based upon real and timely information.
- The projections contained in this report are not simulations intended to be reflected as likely outcomes based probability such as Monte Carlo modeling.
- This report does not intend to produce the likely results/outcomes but instead is based upon perfectly realizing all assumptions such as investment returns, retirement ages, termination decrements, funding requirements, etc.
- This report does not intend to reflect the real volatility of all underlying variables.
- The information represented in the charts and graphs generally is based upon the valuation year for the fiscal year that is two years in the future. For example, information for the actuarial valuation as of December 31, 2006 is used to determine contributions for the fiscal year beginning January 1, 2008.
- Actual results will vary.
- This study does not consider matters of law or matters subject to good faith collective bargaining. These issues may alter the timing and impact of any potential changes to the Retirement System.
- The projections cannot be used to budget future costs or cash outlays.

SECTION II

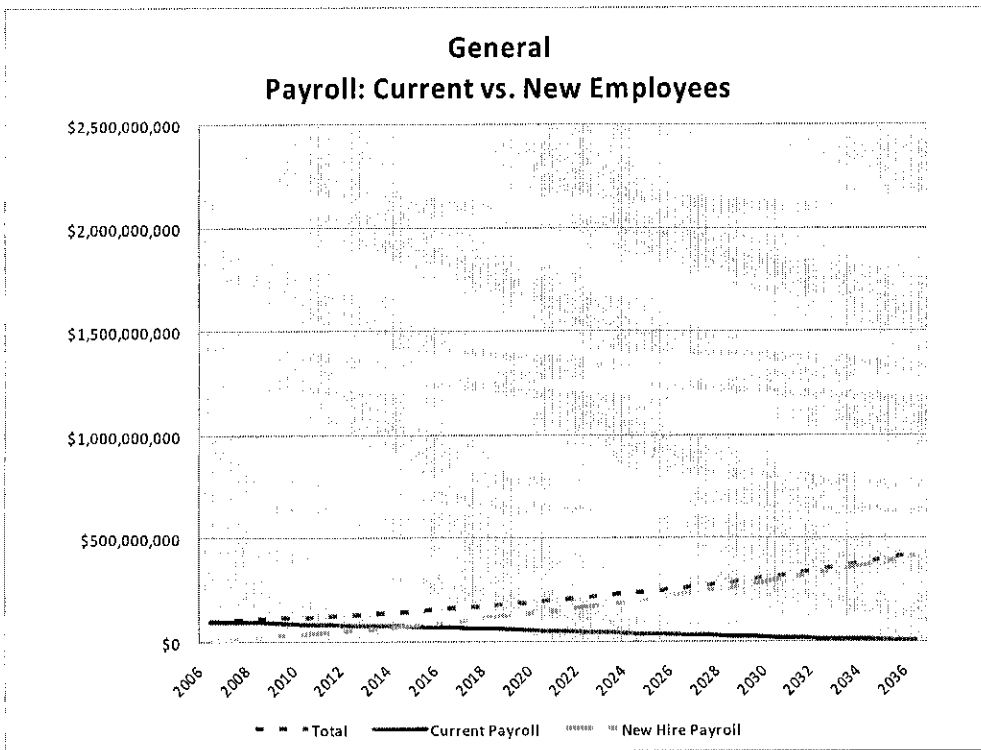
RETIREMENT SYSTEM ANALYSIS

This report provides observation of the projections of the ongoing hard dollar costs of maintaining the defined benefit plan intact in its current form; the report summarizes the work prepared by the Retirement System's actuary, Gabriel Roeder Smith & Company (the actuary) as sent under cover of May 7, 2008 (see Appendix 1). The actuary based their study upon the information requested by Plante & Moran in its letter to the actuary sent under cover of January 25, 2008 (see Appendix 2).

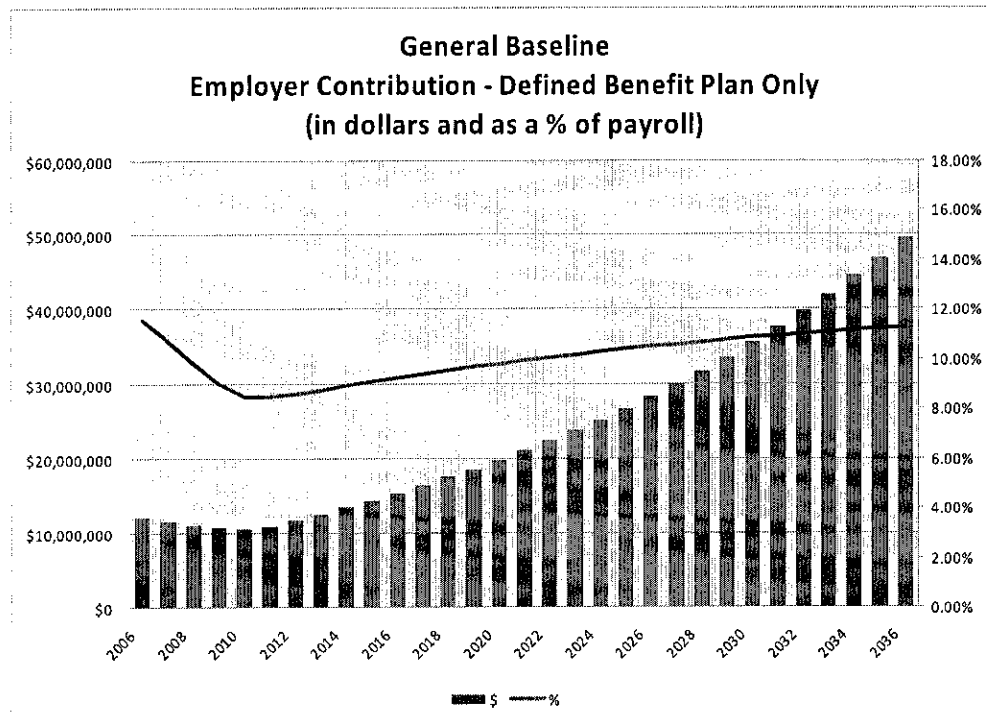
The summary provided in this report is high level and generic – this summary is intended to summarize and supplement the vast amount of information provided by the actuary, it is not intended to be comprehensive and it is not intended to supersede any interpretations or analysis of the actuary.

Baseline Projection

The Baseline Projection is based upon the December 31, 2006 actuarial valuation (for the fiscal year beginning January 1, 2008) and assumes no change in the benefit formula and no change in the benefits provided to current or new employees.



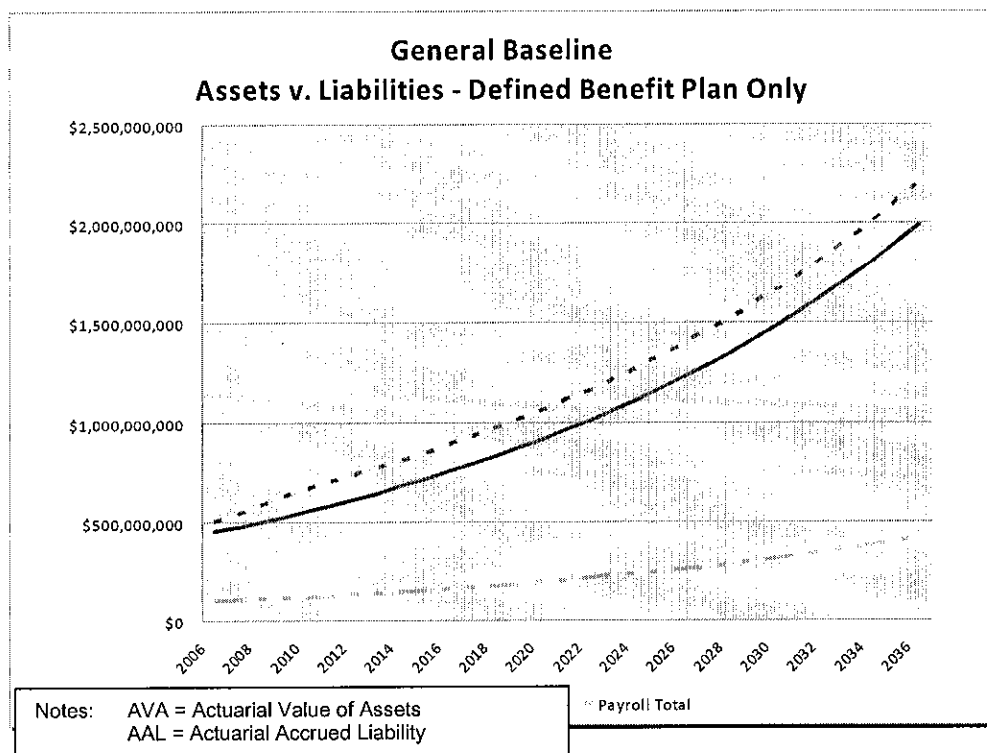
The chart shows the projected future payroll of the General County Employees – for current and new employees – 2006 levels are approximately \$98 million (for all employees) growing to about \$420 million in 2036, most of which is for new employees.



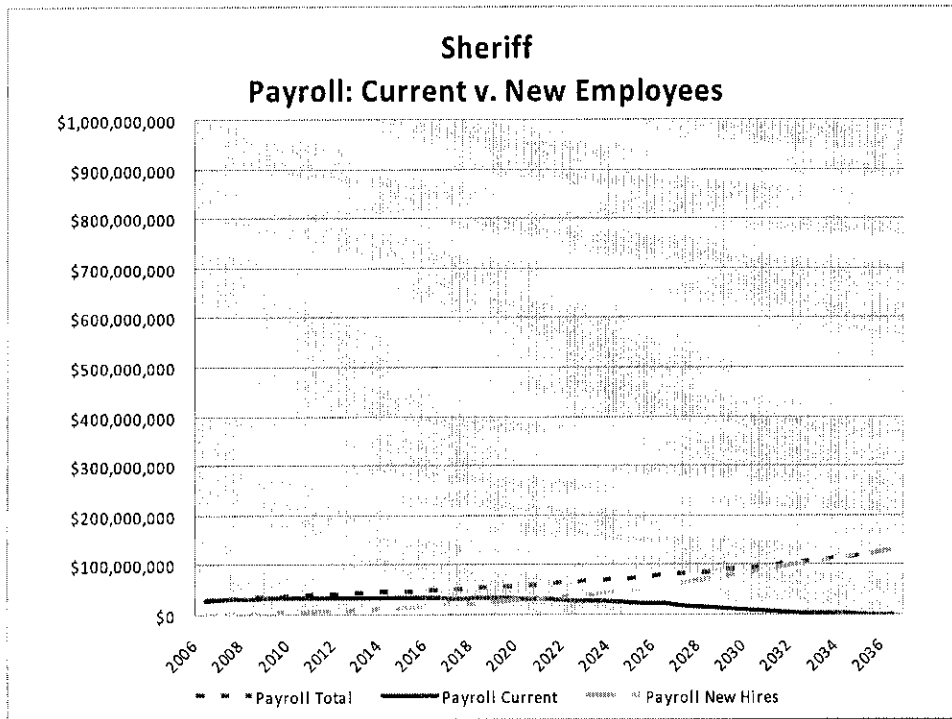
Future employer contributions are expected to grow from the current level of about \$12 million to \$50 million in the next 30-year period.

While the employer-based funding is projected to more than quadruple in hard dollars, as a percent of payroll, the funding contribution remains relatively stable, generally, in the range of 10 to 12% of payroll.

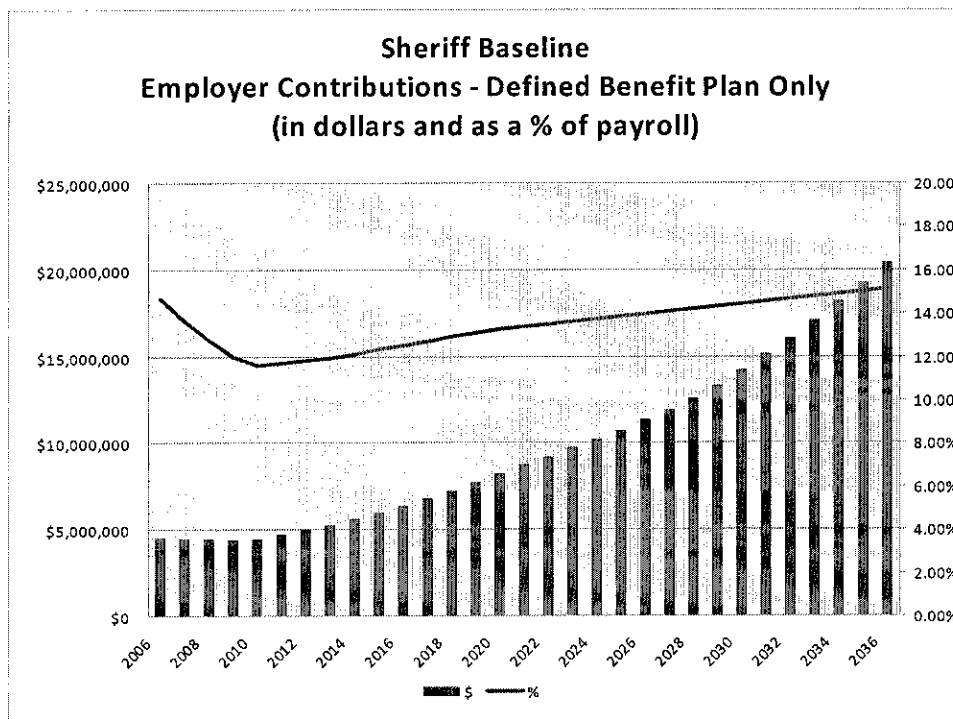
Based upon the long-term projections, the sum of the annual County employer-based contributions will exceed \$724 million during the 30-year period.



Based upon the underlying assumptions of constant investment returns of 7.50% and increasing the hard dollar funding of contributions, assets will continue to be greater than liabilities with the funded percentage of 110% in 2006 being roughly identical to the funded percentage in 2036.



For employees for the Sheriff's Department, the payroll is projected to grow from current levels of about \$29 million to approximately \$129 million by the year 2036.

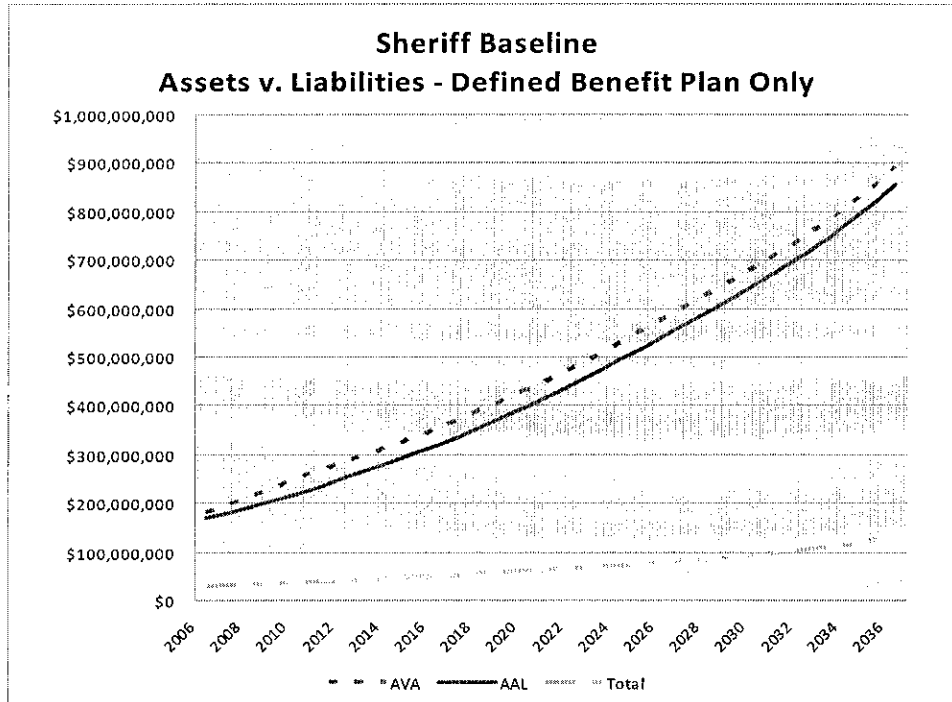


Future employer contributions are expected to grow from the current level of about \$4.5 million to \$20.5 million in the next 30-year period.

While the employer-based funding is projected to about quadruple in hard dollars, as a percent of payroll, the employer-paid funding contribution remains relatively stable, generally, in the range of 14 to 16% of payroll.

Based upon the long-term projections, the sum of the annual County employer-based contributions will exceed \$303 million during the 30-year period.

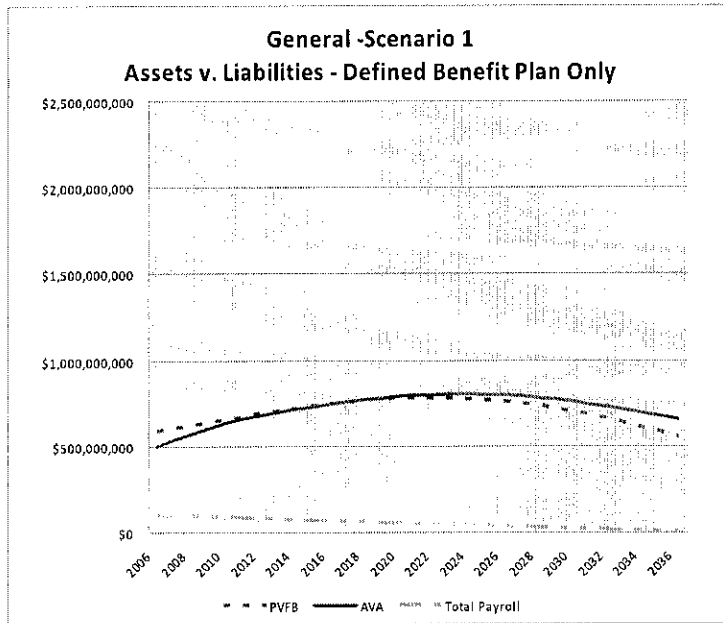
Based upon the underlying assumptions of constant investment returns of 7.50% and increasing the hard dollar funding of contributions, assets will continue to be greater than liabilities with the funded percentage of 106% in 2006 being roughly identical to the funded percentage of 104% in 2036.



Notes: AVA = Actuarial Value of Assets
AAL = Actuarial Accrued Liability

Scenario 1 – No New Plan Entrants – General County Employees

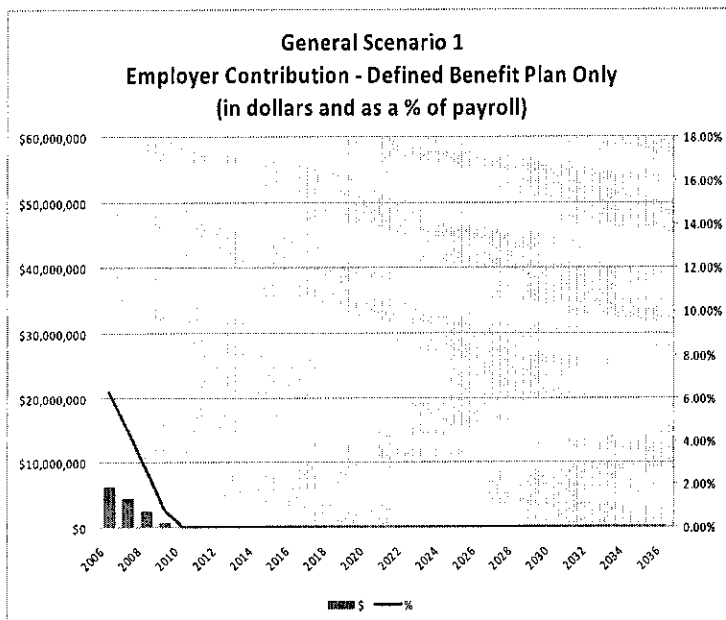
The Scenario 1 Projection is based upon the December 31, 2006 actuarial valuation (for the fiscal year beginning January 1, 2008) and assumes no change in the benefit formula and no change in the benefits provided to current employees; however, it assumes that no new employees will accrue any new benefits under a defined benefit style pension.



Notes: PVFB = Present Value of Future Benefits
AVA = Actuarial Value of Assets

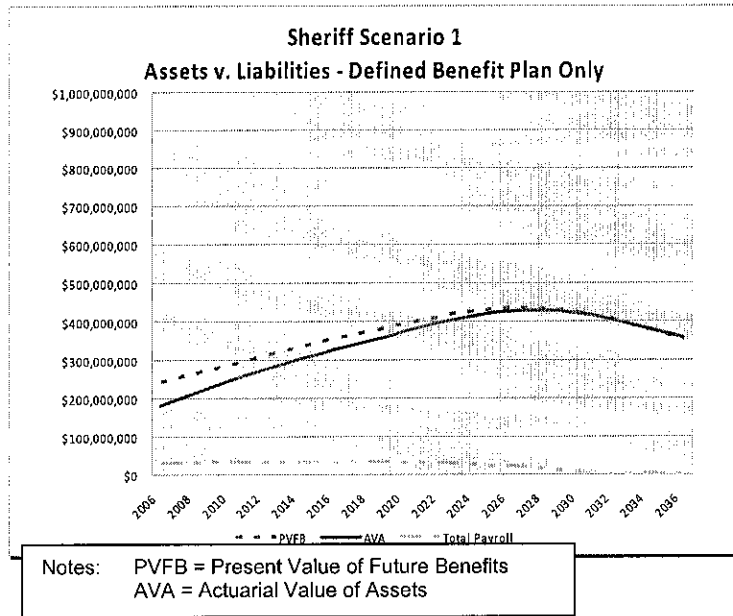
The actuarial funding method changes because the plan does not allow new entrants.

Based upon the assumptions used, the funded percentage remains strong throughout the future working lifetimes of current employees and retirees through the end of the projection period in 2036 – even as more benefits are paid and the corpus of the assets decline.



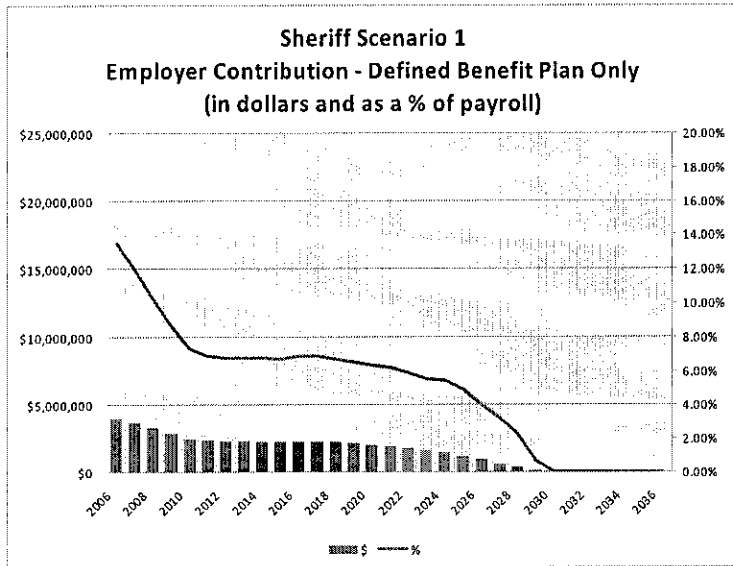
Due to the healthy funding condition of the Retirement System, can and should it be limited to those employees currently eligible to participate, the County contributions would fall, under this projection, from over \$6 million in the 2006 actuarial valuation to \$0 by the 2010 actuarial valuation. This assumes that employee contributions continue at their current level.

Scenario 1 – No New Plan Entrants – Sheriff's Department Employees



The actuarial funding method changes because the plan does not allow new entrants. This appropriate change causes the funded percentage to initially drop.

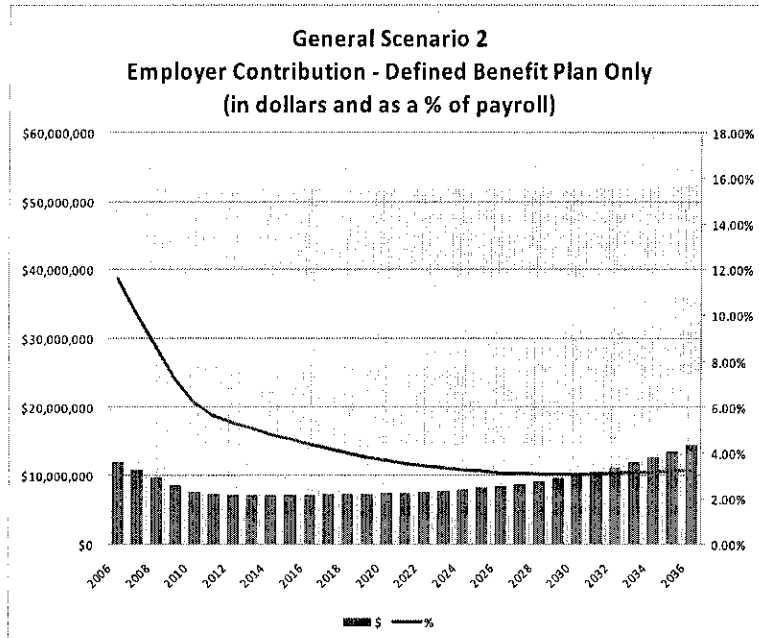
However, based upon the assumptions used, the funded percentage improves to a strong position in the near future.



Due to the healthy funding condition of the Retirement System, can and should it be limited to those employees currently eligible to participate, the County contributions fall, under this projection, from over \$4 million in 2006 to \$2 million by 2020 and to \$0 by 2029. This assumes that employee contributions continue at their current level.

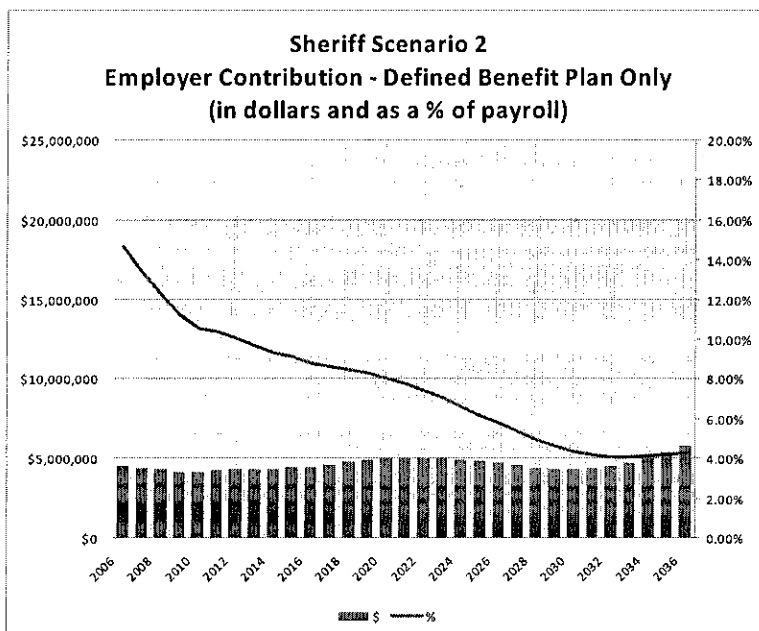
Scenario 2 – 1.25% Formula for New System Entrants

The Scenario 2 Projection is based upon the December 31, 2006 actuarial valuation (for the fiscal year beginning January 1, 2008) and assumes no change in the benefit formula and no change in the benefits provided to current employees; however, it assumes that new employees will have benefits under a modified defined benefit style pension with the first 26 years accruing at 1.25% of final average compensation and 1% thereafter.



For General County employees, the benefit formula for new employees keeps costs relatively constant – i.e., generally under \$10 million per year from 2008 until the year 2030 – as a hard dollar employer-paid contribution. As a percent of payroll, the employer-paid contribution portion declines from over 10% of payroll to over 3% of payroll.

Employee contributions remain constant.

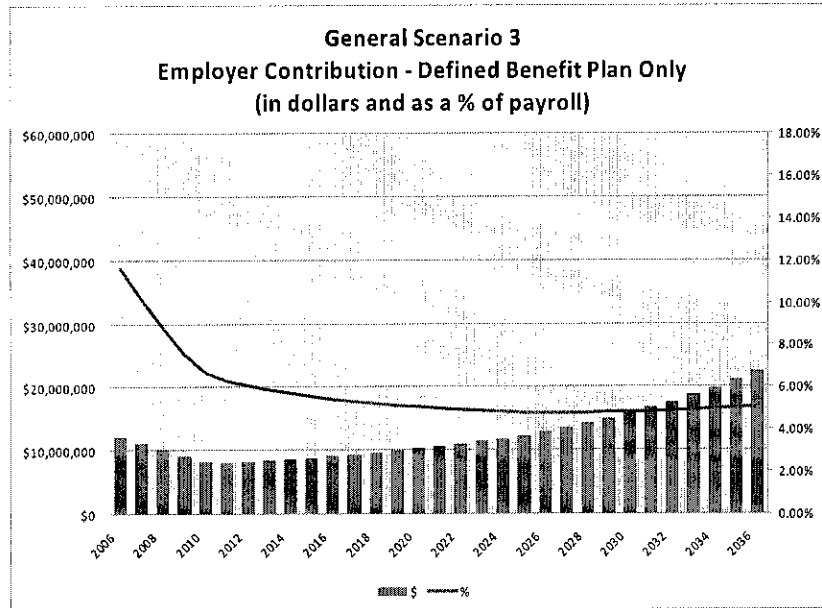


The employer-paid contribution for Sheriff's Department employees average about \$4.6 million during the projection period and would remain relatively constant, under this projection, in hard dollar terms. As a percent of payroll, the employer contribution eventually stabilizes to over 4% of payroll.

Employee contributions remain constant.

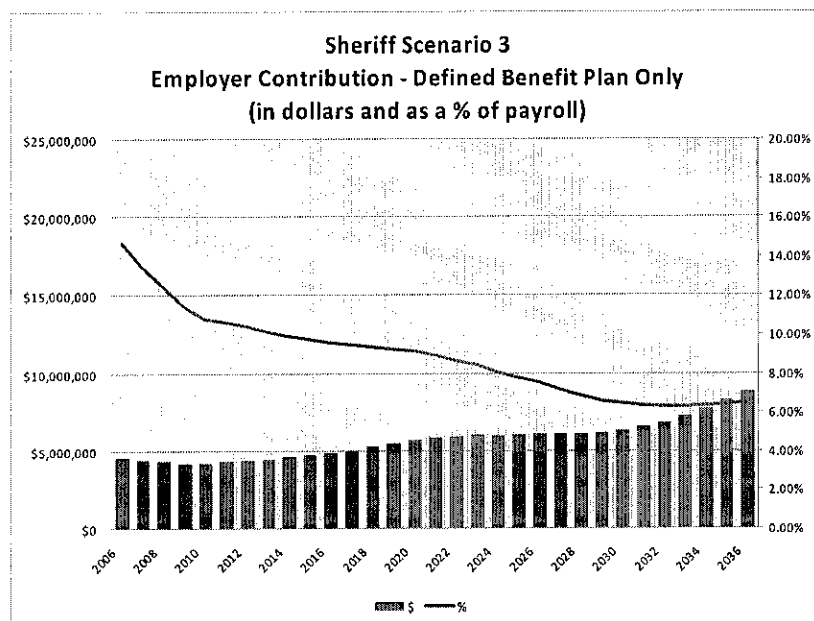
Scenario 3 – 1.50% Formula for New System Entrants

The Scenario 3 Projection is based upon the December 31, 2006 actuarial valuation (for the fiscal year beginning January 1, 2008) and assumes no change in the benefit formula and no change in the benefits provided to current employees; however, it assumes that new employees will have benefits under a modified defined benefit style pension with the first 26 years accruing at 1.50% of final average compensation and 1% thereafter.



For General County employees, the benefit formula for new employees keeps costs relatively constant for the next 10 years or so – i.e., from under \$10 million per year from 2008 through 2020 – as a hard dollar employer-paid contribution; contributions double between 2021 and 2035. As a percent of payroll, the employer-paid contribution portion declines from over 10% of payroll to around 5% of payroll.

Employee contributions remain constant.

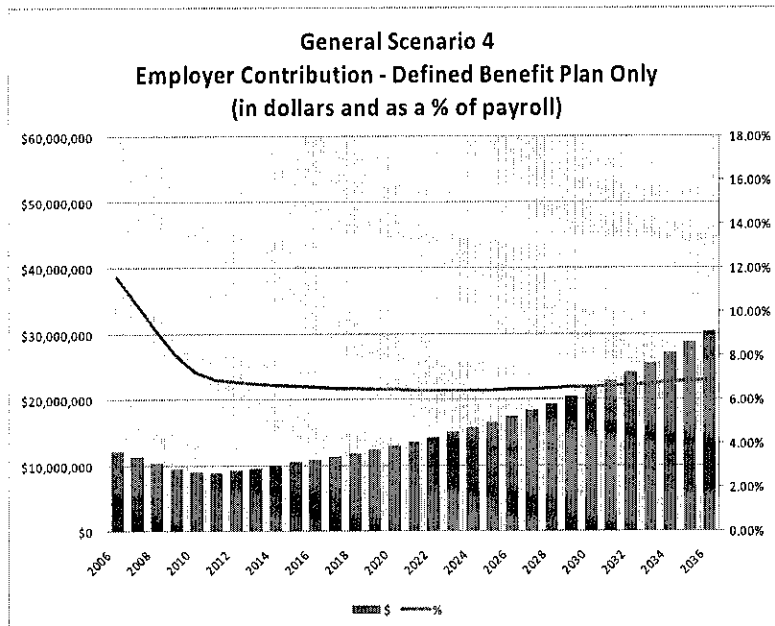


The employer-paid contribution for Sheriff's Department employees dip briefly after 2008 to a low of about \$4.1 million in 2010 after which point contributions, under this projection, steadily increase during the projection period and double by 2035. As a percent of payroll, the employer contribution eventually stabilizes to approximately 6.5% of payroll.

Employee contributions remain constant.

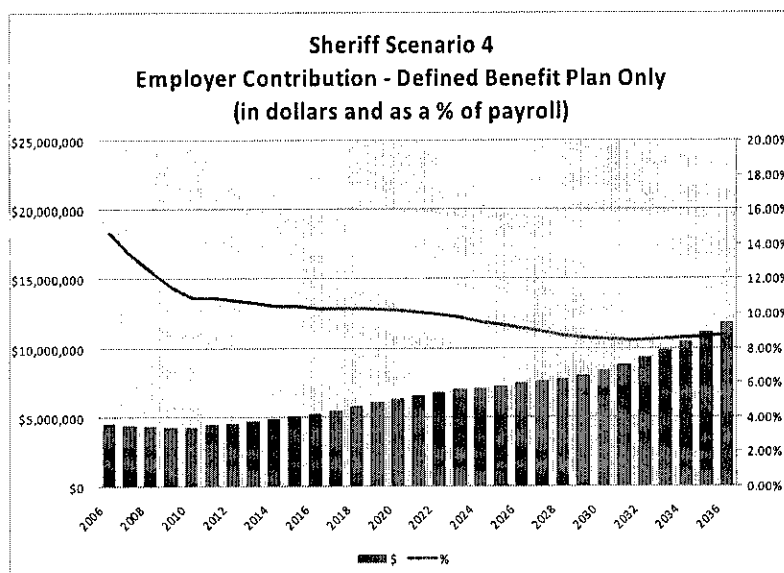
Scenario 4 – 1.75% Formula for New System Entrants

The Scenario 4 Projection is based upon the December 31, 2006 actuarial valuation (for the fiscal year beginning January 1, 2008) and assumes no change in the benefit formula and no change in the benefits provided to current employees; however, it assumes that new employees will have benefits under a modified defined benefit style pension with the first 26 years accruing at 1.75% of final average compensation and 1% thereafter.



For General County employees, the benefit formula for new employees keeps costs relatively constant for the next 5 years or so – i.e., contributions stay under \$10 million per year until 2015 – as a hard dollar employer-paid contribution; contributions are then projected to double between 2009 and 2027. As a percent of payroll, the employer-paid contribution portion declines from over 10% of payroll to around 6.75% of payroll.

Employee contributions remain constant.



The employer-paid contribution for Sheriff's Department employees dip briefly after 2008 to a low of about \$4.2 million in 2009 after which point contributions, under this projection, steadily increase during the projection period and double by 2030. As a percent of payroll, the employer contribution eventually stabilizes to approximately 8.75% of payroll.

Employee contributions remain constant.

SECTION III

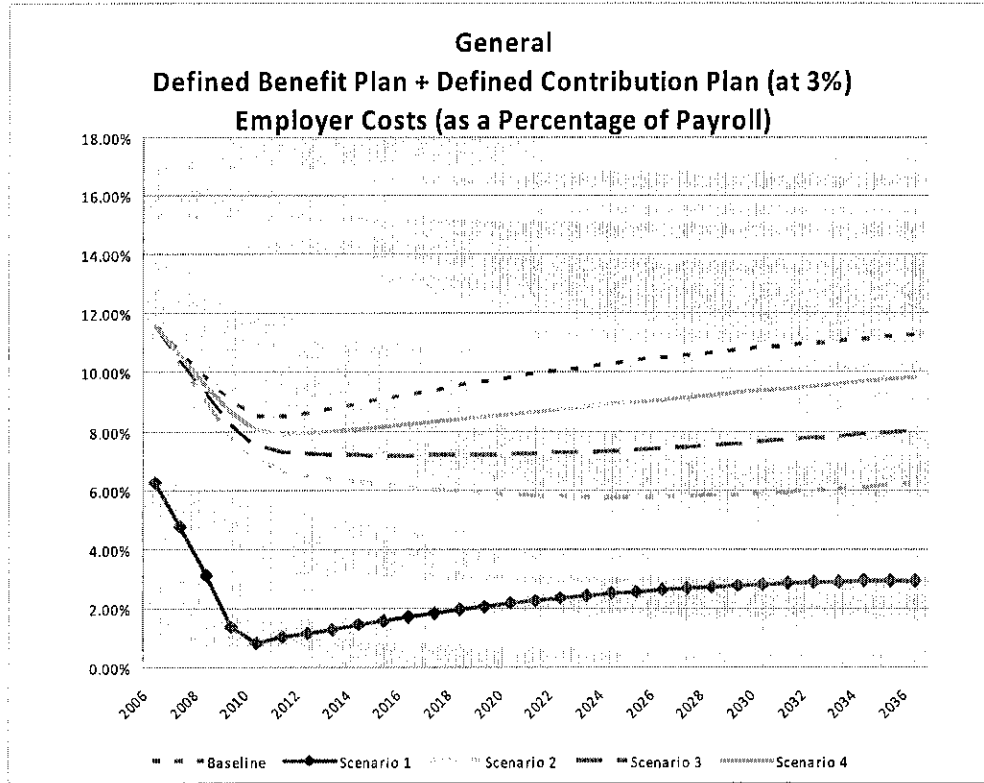
HYBRID PLAN ANALYSIS

For purposes of this study only, a hybrid plan is defined as a combination of a defined benefit plan and a defined contribution plan which allows participants to accumulate benefits in two different ways: 1) the defined benefit plan provides for an annuity at retirement payable for the life of the participant and/or the joint lives of a participant and a beneficiary (in a reduced amount to reflect the joint life expectancy) and 2) the defined contribution plan permits/requires an employer contribution as a percent of the employee's pay, this amount is contributed annually and it accumulates based upon these ongoing contributions with investments chosen by the participants.

The cost of these plans while calculated in the aggregate, has current employees participating in the current defined benefit plan only; new employees receive both a modified defined benefit plan formula and a defined contribution plan benefit as defined below:

- **Defined Benefit Plan.** This study incorporates the current and modified benefit formulas previously addressed in this report, that is, service multiplied by set rates of either 1.25%, 1.50%, 1.75%, or 2.40% of final average pay for the first 26 years with 1.00% of final average pay thereafter.
- **Defined Contribution Plan.** The defined contribution component was calculated using two contribution formulas: 3.0% of annual, eligible participant payroll and 6.0% of annual, eligible participant payroll.

General County Employees



For General County employees, this chart demonstrates that adding a 3.0% employer contribution with a defined contribution style plan in addition to any of the permutations of the defined benefit plan formulas results in a contribution as a percent of payroll that is less than current contribution to the defined benefit plan alone.

However, in terms of hard dollar contributions, employer-paid contributions swell,

doubling or tripling over the projection period.

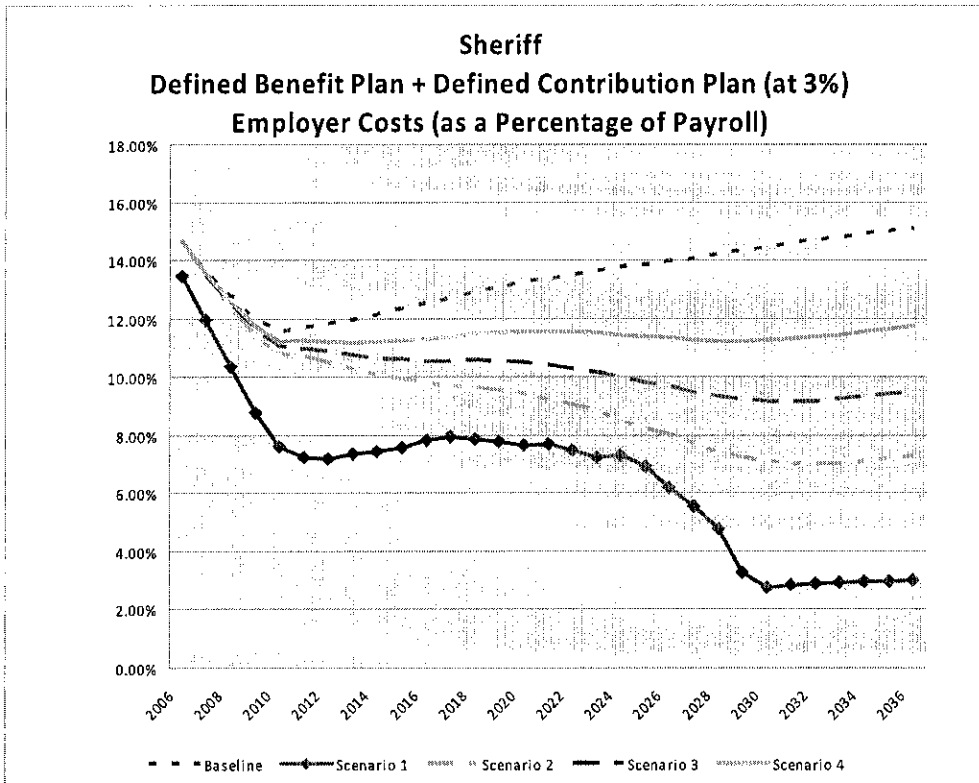
General County Employees Hybrid Plan with a 3.0% Defined Contribution Plan County Costs by Year (approximate, in millions of dollars)				
Fiscal Year	Baseline	Scenario 2 1.25% Hybrid	Scenario 3 1.50% Hybrid	Scenario 4 1.75% Hybrid
2008	11.96	11.96	11.96	11.96
2016	13.29	9.30	10.67	12.05
2024	22.24	12.74	16.04	19.33
2032	35.49	19.21	25.00	30.71

Please note: Scenario 1, the scenario that assumes the defined benefit plan does not allow any new entrants is not included in the cost analysis chart since, by definition, it would not be a hybrid since it would provide retirement benefits only using a defined contribution plan.

Notes:

- Baseline – the current plan without modification for all employees
- Scenario 1 – current defined benefit plan for current employees only plus defined contribution plan for new employees
- Scenario 2 – new employees get 1.25% defined benefit plan plus a defined contribution plan
- Scenario 3 – new employees get 1.50% defined benefit plan plus a defined contribution plan
- Scenario 4 – new employees get 1.75% defined benefit plan plus a defined contribution plan

Sheriff's Department



For Sheriff's Department employees, the hybrid model stabilizes costs – as a percent of pay – at a more rapid rate than for General County employees because of the short anticipated work horizon.

The hard dollar costs start at nearly the same amount in 2008, at approximately \$4.2 million and increase to an amount not quite double under Scenario 2 by the year 2032 with the costs associated with the other scenarios more than doubling to almost tripling under Scenarios 3 and 4 respectively.

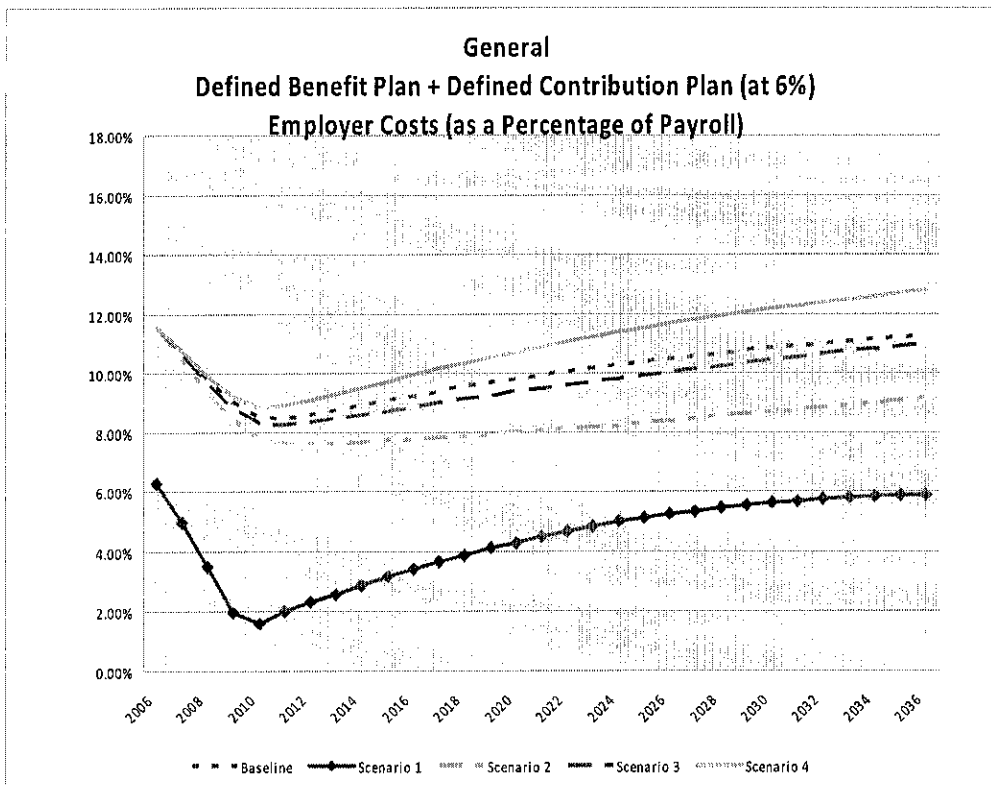
Sheriff's Department Employees Hybrid Plan with a 3.0% Defined Contribution Plan County Costs by Year (approximate, in millions of dollars)				
Fiscal Year	Baseline	Scenario 2 1.25% Hybrid	Scenario 3 1.50% Hybrid	Scenario 4 1.75% Hybrid
2008	4.50	4.50	4.50	4.50
2016	5.56	4.63	4.89	5.15
2024	9.18	6.14	6.99	7.86
2032	14.18	6.95	9.01	11.05

Please note: Scenario 1, the scenario that assumes the defined benefit plan does not allow any new entrants is not included in the cost analysis chart since, by definition, it would not be a hybrid since it would provide retirement benefits only using a defined contribution plan.

Notes:

- Baseline – the current plan without modification for all employees
- Scenario 1 – current defined benefit plan for current employees only plus defined contribution plan for new employees
- Scenario 2 – new employees get 1.25% defined benefit plan plus a defined contribution plan
- Scenario 3 – new employees get 1.50% defined benefit plan plus a defined contribution plan
- Scenario 4 – new employees get 1.75% defined benefit plan plus a defined contribution plan

General County Employees



For General County employees, from a cash outlay perspective, this chart demonstrates that adding a 6.0% employer contribution with a defined contribution style plan in addition to any of the permutations of the defined benefit plan formulas results in a contribution that approximately equals or exceeds the contributions in 2 out of the 3 valid hybrid scenarios.

Further, in terms of hard dollar contributions,

employer-paid are not controlled or mitigated by utilizing a combination of these plans to create a hybrid plan.

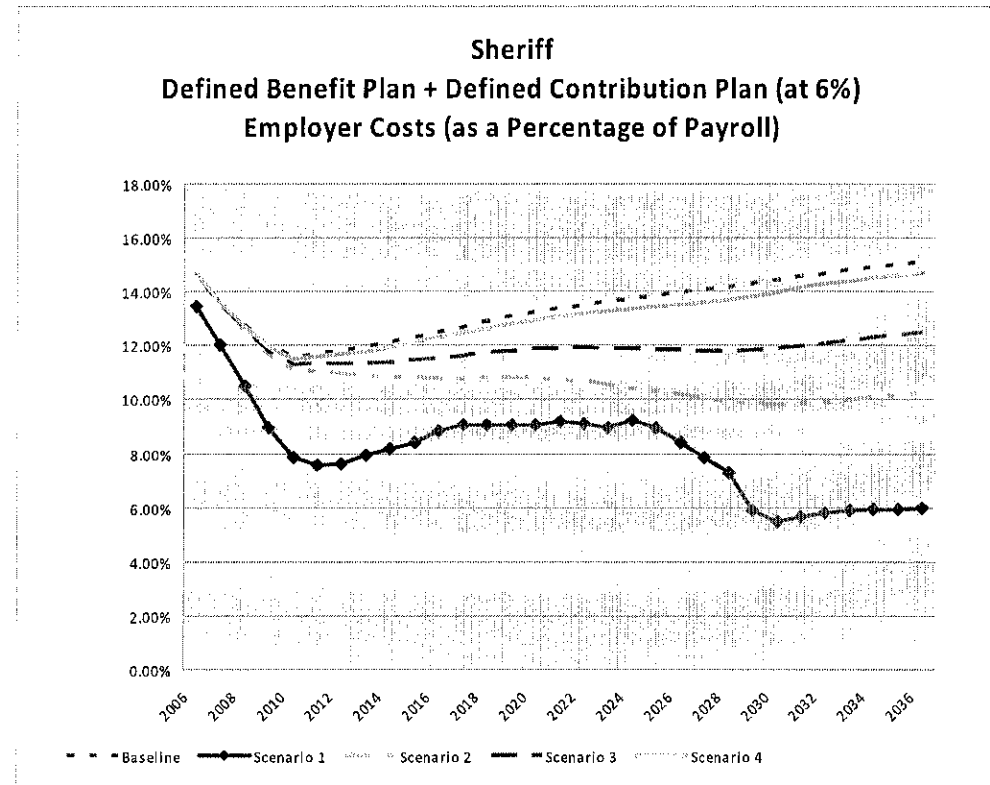
General County Employees Hybrid Plan with a 6.0% Defined Contribution Plan County Costs by Year (approximate, in millions of dollars)				
Fiscal Year	Baseline	Scenario 2 1.25% Hybrid	Scenario 3 1.50% Hybrid	Scenario 4 1.75% Hybrid
2008	11.96	11.96	11.96	11.96
2016	13.29	14.44	12.81	14.18
2024	22.24	17.91	21.21	24.51
2032	35.49	28.42	34.22	29.92

Please note: Scenario 1, the scenario that assumes the defined benefit plan does not allow any new entrants is not included in the cost analysis chart since, by definition, it would not be a hybrid since it would provide retirement benefits only using a defined contribution plan.

Notes:

Baseline – the current plan without modification for all employees
 Scenario 1 – current defined benefit plan for current employees only plus defined contribution plan for new employees
 Scenario 2 – new employees get 1.25% defined benefit plan plus a defined contribution plan
 Scenario 3 – new employees get 1.50% defined benefit plan plus a defined contribution plan
 Scenario 4 – new employees get 1.75% defined benefit plan plus a defined contribution plan

Sheriff's Department



For Sheriff's Department employees, the hybrid model stabilizes costs – as a percent of pay – at a more rapid rate than for General County employees because of the short anticipated work horizon. However, the cost for Scenario 4 is almost identical to the Baseline cost.

Further, under every scenario, the hard dollar costs start at nearly the same amount in 2008, at approximately \$4.2 million and increase to an amount not quite double under

Scenario 2 by the year 2024 with the costs associated with the other scenarios more than tripling under Scenarios 3 and 4 respectively by the year 2032.

Sheriff's Department Employees Hybrid Plan with a 6.0% Defined Contribution Plan County Costs by Year (approximate, in millions of dollars)				
Fiscal Year	Baseline	Scenario 2 1.25% Hybrid	Scenario 3 1.50% Hybrid	Scenario 4 1.75% Hybrid
2008	4.50	4.50	4.50	4.50
2016	5.56	4.97	5.23	5.49
2024	9.18	7.25	8.10	8.97
2032	14.18	9.63	11.69	13.73

Please note: Scenario 1, the scenario that assumes the defined benefit plan does not allow any new entrants is not included in the cost analysis chart since by definition it would not be a hybrid since it would provide retirement benefits only using a defined contribution plan.

Notes:

- Baseline – the current plan without modification for all employees
- Scenario 1 – current defined benefit plan for current employees only plus defined contribution plan for new employees
- Scenario 2 – new employees get 1.25% defined benefit plan plus a defined contribution plan
- Scenario 3 – new employees get 1.50% defined benefit plan plus a defined contribution plan
- Scenario 4 – new employees get 1.75% defined benefit plan plus a defined contribution plan

SECTION IV

SUBSIDIZED BENEFITS COST

The additional annual County contribution for the benefit subsidies is approximately

- DROP – 0.50% of payroll for General County employees and 0.60% of payroll for Sheriff's Department employees, and
- Rule of 70 – 2.70% of payroll for General County employees.

These additional costs, as a percent of eligible payroll, could be eliminated for all prospective County contributions if the subsidies were eliminated.

SECTION V

INDIVIDUAL CALCULATIONS

Individual benefit projections were done for long-service employees based on the assumption that the varying levels of benefits for the current and hybrid plans were in effect for the past 30 years and that the compensation of the hypothetical participant was \$50,000 in 2008. Other assumptions are listed in the table below. Additionally, the individual calculations are detailed in Appendix 3.

Assumptions	
Salary Scale	5.00%
Interest	7.50%
Final Compensation	\$50,000
Accumulation Period	30
Defined Benefit Conversion Factor	10.1668 RP 2000 Blended Sex Mortality 7.50%

The accumulated benefits under the Defined Contribution Plan amount to approximately \$64,000 under the 3.0% annual contribution formula and about \$129,000 under the 6% annual contribution formula; this amounts to an accumulation of 1.25 and 2.58 times final salary, respectively.

Defined Contribution Plan Accumulation		
Annual Defined Contribution Percentage	3.00%	6.00%
Defined Contribution Accumulation	\$64,619	\$129,238

The accumulated benefits, in the form of a lump-sum benefit, under the Defined Benefit Plan vary between approximately \$172,000 under the 1.25% formula to \$234,000 under the 1.75% formula; the conversion of annual life annuity to a lump sum amount is only a perfectly valid method if, and only if, lump sum benefits are available under the Retirement System. The concept of turning a stream of payments into a cash value is one that may necessitate consideration of many more variables such as market forces, inflation, cost of living increases, etc. that are beyond the scope of this calculation.

Defined Benefit Plan Accumulation				
Defined Benefit - First 26 Years	1.25%	1.50%	1.75%	2.40%
Defined Benefit - After First 26 Years	1.00%	1.00%	1.00%	1.00%
Defined Benefit Benefit Life Annuity at Age 62	\$16,987	\$20,012	\$23,038	\$30,251
Benefit as a Percent of Final Pay	34%	40%	46%	61%
Defined Benefit Lump Sum Equivalent at Age 62	\$172,707	\$203,463	\$234,219	\$307,560

The modified defined benefit plan formulas provide replacement income in retirement between 34% and 46% of final pay.

For a 30 year service employee, earning \$50,000 as his/her final pay in 2008, the current 2.40% formula produces a lump-sum benefit, using the above-mentioned assumptions, of about \$307,000. The various permutations of defined benefit plan and defined contribution plan benefits range from a combined plan benefits of \$237,000 (using the 1.25% defined benefit plan and the 3.00% defined contribution plan) to \$363,000 (using the 1.75% defined benefit plan and the 6.00% defined contribution plan).

Defined Benefit Formula	Annual Defined Contribution			
		0.00%	3.00%	6.00%
	1.25%	\$172,707	\$237,326	\$301,945
	1.50%	\$203,463	\$268,082	\$332,701
	1.75%	\$234,219	\$298,838	\$363,457
	2.40%	\$307,560	n/a	n/a

In the first column, this chart also shows what amounts would "accumulate" using the varying levels of defined benefit plan formulas assuming there is no defined contribution plan supplement.

SECTION VI

CONCLUSION AND RECOMENDATIONS

The County wishes to achieve several primary goals with the study:

1. Provide meaningful retirement benefits to its employees
2. Containing increasing costs and the mitigating of the associated funding and investment return volatility, and
3. Sustaining any increased contributions on a long-term basis without disrupting services, staffing, and/or requiring increased taxes

Basis for Conclusion and Recommendation. Setting criteria for a recommendation is more important than the ultimate recommendation. These criteria include:

- *Outcome.* Achieving and/or maximizing most, but not necessarily all, of the desired goals is the primary objective.
- *Employee Expectations.* Expectations for new employees can easily be defined differently than it can for current employees. Although defining economic choices in terms of reduced services and jobs may ultimately be a necessary modification to expectations for current employees.
- *Measurements.* Reflecting on the appropriateness of the measurements, hard dollar contributions on behalf of employees is the best measure to determine economic burden on the County (and any potential strain on the Retirement System). When calculating benefit contributions as a percent of employee compensation, the actuary is merely authenticating that the funding method is reasonable and appropriate, not that the economic burden is reasonable. Unless and until tax revenue has an inflow that is directly correlated and positively parallel to employee compensation, it is not a meaningful measure.
- *Adequacy.* Benefit adequacy in retirement is usually contingent upon three factors: retirement savings/benefits, Social Security, and personal savings. In addition, the necessary retirement accumulations should reflect time until retirement, age at retirement, spouse age, standard of living, inflation, health and many other factors. A decision must be made on whether 65% of final average compensation is simply adequate, or more than adequate.
- *Efficiency.* The current defined benefit arrangement provides an efficient mechanism for funding and providing benefits. However, the prime decision that must be made is whether the current normal cost, i.e., the cost of funding one year of benefits under the current structure, of 17% - 20% of current payroll is an affordable and sustainable amount.

Conclusions. Several conclusions are clear:

1. For the time being, leave existing eligible employees with the current plan structure. Communicate that it may be necessary to revise and change at some point in the future. Under the assumptions used, the plan is well funded and looks to remain well funded as long as investment returns hold. Additionally, based upon the projections, limiting the benefits and/or limiting new membership into the plan, can significantly mitigate future costs.
2. Limit a) new membership into the plan or b) benefits available under the plan. The costs cannot be curtailed unless membership is reduced from projected levels or benefits are reduced for new (and potentially current) participants.

3. Determine the Impact on Retiree Medical Benefits. It is likely that any current employee who retires will be replaced, therefore any savings due to reduction in County payroll is unlikely. However, if employees leave active employment although the Retirement System stops accruing benefits for this participant, the retiree medical benefits commence and could place an unexpected strain on that system.

Recommendations. Cost containment cannot occur unless benefits are limited in the future – the same benefits could be catastrophic from a tax revenue and required funding perspective. Our five specific recommendations are:

1. Provide new employees with a 1.25% defined benefit plan and provide a matching defined contribution plan that provides for a 100% match of employee contributions up to a maximum of 3.00% of compensation.

This will ensure that retirement benefits are fairly close to as adequate as they are currently, that is, 6.00% of payroll will be deferred (3.00% of employee contributions, 3.00% employer matching contributions) plus a defined benefit plan that provides for 34% annual replacement income in retirement, the combination of retirement plans with any available Social Security benefits will achieve significant replacement income.

2. Current and future employee contributions should be kept at the current levels.

That is, General County employees – 3.5% of annual compensation with certain groups paying 2.5% (i.e., the RN's, LPN's, and UAW Senior Citizen Services), and the Sheriff's Department employees – 4.0% of annual compensation.

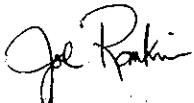
3. Eliminate the plan subsidies that provide for unreduced early retirement at some point in the foreseeable future. Removing the "Rule of 70" subsidy would save 2.7% of General County employee payroll as an annual contribution to the Retirement System. Reducing this benefit over time will afford employees the opportunity to plan for the elimination.
4. To the extent employees are not eligible to participate in Social Security due to their employment status with the County, the 1.75% defined benefit retirement formula should be used in conjunction with a matching defined contribution plan that provides for a 100% match of employee contributions up to 3.00% of compensation.
5. Before any recommendation is implemented, a study should be conducted by the actuary that updates the projected costs on the Retirement System as well as retiree medical plan.

It has been our pleasure to perform this study for the County and, if you desire, we are happy to present our findings at the next Budget Committee meeting.

If you have any questions, please call me at (248) 375-7361.

Very truly yours,

PLANTE & MORAN, PLLC



Joseph F. Rankin



Gabriel Roeder Smith & Company
Consultants & Actuaries

One Towne Square
Suite 800
Southfield, MI 48076-3723

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May 7, 2008

Mr. David M. Diegel
Finance Director
Macomb County
10 North Main Street
Mount Clemens, Michigan 48043

**Re: Macomb County Employees' Retirement System (General and Sheriff) – 30
Year Projections Requested by Plante & Moran**

Dear Mr. Diegel:

As you know, Gabriel, Roeder, Smith & Company (GRS) received a request from Plante & Moran to prepare employer contributions projections for the Macomb County Employees' Retirement System under various scenarios. The request is described in detail in a letter dated January 25, 2008 addressed to Cathy Nagy of GRS, from Joe Rankin of Plante & Moran. These projections are part of a larger study that Plante & Moran will conduct at the request of the Macomb County Board of Commissioners.

GRS has completed the projections and the results are summarized in the attached tables. We are also enclosing a spreadsheet of the results.

Our calculations were based on the following:

- Demographic and financial information provided by the Retirement Commission for the December 31, 2006 annual valuation.
- The same assumptions and methods that were used in the December 31, 2006 annual valuation.
- The same benefit provisions that were used in the December 31, 2006 annual valuation, except the benefit provisions for new hires were changed as requested in Plante & Moran's letter dated January 25, 2008.

We used the following assumptions and funding methods in our projections:

- All demographic assumptions used in the December 31, 2006 annual valuation will be met during the projection period.
- New entrants will replace members who retire, withdraw or die such that the active population remains stable.
- The market value of assets will earn the assumed 7.5% return each year during the projection period.
- There will be no benefit changes during the projection period for members who were System participants as of December 31, 2006.
- The employer contributions through December 31, 2007 are not affected, and are based on previous annual actuarial valuations.
- The contribution percentages were calculated based on the payroll of the entire General division and Sheriff division, including the payroll of the members who are in the DROP.
- **Open amortization period (this is the current funding policy):**
 - The amortization period is 20 years as of December 31, 2006. The 20 year amortization period is reset each year. This funding policy was adopted by the Retirement Commission.
 - This amortization methodology is utilized in the **Baseline, and Scenarios 2, 3 and 4**. These are the scenarios where new entrants continue to be covered by the defined benefit program, although new hires would have a different benefit structure under Scenarios 2, 3 and 4.
- **Closed amortization period, or the Aggregate Funding method (this is the funding policy GRS would recommend, if the defined benefit plan becomes closed to new hires):**
 - Members are assumed to leave active status according to our assumptions. No new employees enter the division.
 - Under this funding policy (the Aggregate Funding method) the unfunded present value of future benefits is expected to be paid off by contributions over the future working lifetime of the closed active group. As a result, for Scenario 1 we are showing the Present Value of Future Benefits (PVFB) rather than the Actuarial Accrued Liability (AAL).
 - This amortization methodology is utilized in **Scenario 1**.
 - Under this methodology, using the projection assumptions coupled with investment gains not yet recognized in the actuarial value of assets, it appears that projected contributions more than fully fund the plan. In reality, if the plan becomes closed, future valuation methods and/or assumptions would be adjusted to avoid over-funding the plan.

Mr. David M. Diegel
May 7, 2008
Page 3

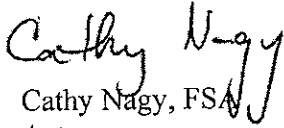
The attached exhibits show the results of our calculations in tabular form.

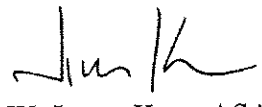
Please note that under Scenario 1 for the General group (if the defined benefit plan is closed to new hires and new hires are placed in a defined contribution arrangement), employer contributions are only expected to be required for the next couple of years. For the remainder of the projection period no employer contributions are expected to be required. This outcome is a result of the current funded status of that division. The General division is over-funded as of December 31, 2006. In addition, there are investment gains that are expected to be recognized in the actuarial value of assets, and these gains would further improve the funded position of this division. Of course, these results are contingent upon the fund earning a 7.5% investment return each year during the projection period.

The contribution projections from this study should not be used for short term budgeting purposes because the assumptions are designed to be a long term expectation of future events. These projections illustrate the pattern of employer contributions under different benefit designs. A projection of contribution rates for budgeting purposes would require additional analysis, which is beyond the scope of this study.

If you have any questions or need additional information, do not hesitate to call us.

Sincerely,


Cathy Nagy, FSA
Actuary


W. James Koss, ASA
Actuary

CN/WJK:lr
Enclosures

cc: Mr. Joseph Rankin -- Plante & Moran

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

GENERAL -- BASELINE

Year Ending December 31,	Current	New Hires	Total	AAL	AVA	UAAL	Funded %	ER Normal Cost	EE Contribution	Amortization Period	ER UAAL	Total ER Contribution
								\$	%		\$	\$
2006	\$98,371,544	\$0	\$98,371,544	\$452,681,589	\$500,448,749	\$47,767,160	110.55%	\$15,183,648	14.70%	20	\$(3,220,995)	\$11,962,653
2007	95,676,254	7,333,157	103,009,411	475,169,926	539,267,750	(64,097,824)	113.49%	15,877,871	14.68%	20	(4,322,191)	11,555,680
2008	92,886,041	14,722,893	107,608,934	499,673,327	581,348,827	(81,675,501)	116.35%	16,575,542	14.67%	20	(5,507,474)	11,068,068
2009	89,628,787	22,721,379	112,350,166	526,020,313	625,477,129	(99,456,816)	118.91%	17,303,858	14.67%	20	(6,706,489)	10,598,369
2010	85,850,419	31,359,095	117,209,514	554,100,171	666,692,666	(112,592,495)	120.32%	18,042,060	14.66%	20	(7,592,243)	10,449,817
2011	81,233,679	40,950,362	122,184,041	583,857,219	701,553,137	(117,695,918)	120.16%	18,807,789	14.66%	20	(7,936,373)	10,871,416
2012	79,331,099	49,136,275	128,467,374	615,159,676	736,422,324	(121,262,649)	119.71%	19,761,494	14.65%	20	(8,176,881)	11,584,613
2013	76,911,637	58,194,000	135,105,637	647,836,045	772,007,831	(124,171,786)	119.17%	20,768,439	14.64%	20	(8,373,048)	12,395,391
2014	74,196,980	67,893,003	142,089,983	681,905,700	808,683,089	(126,777,389)	118.59%	21,842,072	14.64%	20	(8,548,747)	13,293,325
2015	71,143,938	78,194,407	149,338,345	717,337,159	846,623,629	(129,286,470)	118.02%	22,940,610	14.63%	20	(8,717,937)	14,222,673
2016	67,722,028	89,144,049	156,866,077	754,121,678	885,993,302	(131,871,824)	117.49%	24,096,982	14.63%	20	(8,892,271)	15,204,711
2017	64,409,885	100,414,672	164,824,557	792,358,869	926,881,336	(134,522,467)	116.98%	25,319,524	14.63%	20	(9,071,006)	16,248,518
2018	60,994,522	112,136,194	173,130,716	832,195,804	969,463,486	(137,267,682)	116.49%	26,593,475	14.63%	20	(9,256,120)	17,339,355
2019	57,455,669	124,385,109	181,840,778	873,898,299	1,014,036,370	(140,138,071)	116.04%	27,914,378	14.62%	20	(9,449,673)	18,464,705
2020	53,821,348	137,170,438	190,991,786	917,468,668	1,060,609,650	(143,140,982)	115.60%	29,319,149	14.62%	20	(9,652,163)	19,666,986
2021	50,151,560	150,470,011	200,621,571	963,116,850	1,109,376,298	(146,259,448)	115.19%	30,776,352	14.61%	20	(9,862,445)	20,913,907
2022	46,467,130	164,245,224	210,712,354	1,010,938,496	1,160,455,149	(149,516,652)	114.79%	32,324,329	14.61%	20	(10,082,082)	22,242,247
2023	42,905,398	178,456,900	221,362,298	1,061,207,467	1,214,107,119	(152,899,652)	114.41%	33,934,840	14.60%	20	(10,310,201)	23,624,639
2024	39,181,578	193,281,822	232,463,396	1,113,916,347	1,270,363,151	(156,446,805)	114.04%	35,636,639	14.60%	20	(10,549,390)	25,087,249
2025	35,527,738	208,591,921	244,119,659	1,169,199,225	1,329,352,092	(160,152,866)	113.70%	37,397,911	14.59%	20	(10,799,294)	26,598,617
2026	32,011,206	224,353,694	256,364,900	1,227,130,316	1,391,168,016	(164,037,699)	113.37%	39,273,821	14.59%	20	(11,061,253)	28,212,568
2027	28,698,376	240,576,810	269,275,186	1,287,965,053	1,456,046,656	(168,081,602)	113.05%	41,223,338	14.58%	20	(11,333,938)	29,889,400
2028	25,539,493	257,315,713	282,855,206	1,351,875,619	1,524,190,237	(172,314,618)	112.75%	43,272,604	14.57%	20	(11,619,375)	31,653,229
2029	22,535,958	274,565,681	297,101,639	1,418,926,790	1,595,652,141	(176,725,351)	112.45%	45,452,094	14.57%	20	(11,916,796)	33,535,298
2030	19,657,487	292,414,149	312,071,636	1,489,389,208	1,670,715,448	(181,326,239)	112.17%	47,709,512	14.56%	20	(12,227,039)	35,482,473
2031	17,001,569	310,802,174	327,803,743	1,563,433,884	1,749,583,367	(186,149,483)	111.91%	50,080,217	14.55%	20	(12,552,276)	37,527,941
2032	14,569,083	329,765,685	344,334,768	1,641,326,886	1,832,500,783	(191,173,898)	111.65%	52,605,744	14.55%	20	(12,891,078)	39,714,666
2033	12,364,246	349,315,110	361,679,356	1,723,258,726	1,919,667,484	(196,408,758)	111.40%	55,217,587	14.54%	20	(13,244,071)	41,973,516
2034	10,421,828	369,465,223	379,887,051	1,809,696,722	2,011,595,819	(201,899,097)	111.16%	57,997,356	14.54%	20	(13,614,291)	44,383,065
2035	8,700,983	390,283,306	398,984,289	1,900,761,434	2,108,384,963	(207,623,529)	110.92%	60,871,038	14.53%	20	(14,000,296)	46,870,742
2036	7,181,104	411,839,672	419,020,864	1,996,584,786	2,210,219,939	(213,635,152)	110.70%	63,927,918	14.53%	20	(14,405,667)	49,522,251

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

GENERAL – SCENARIO 1

Year Ending December 31,	Payroll		Total	PVFB	AVA	Unfunded PVFB	Funded %	EE Contribution	Total ER Contribution \$
	Current	New Hires							
2006	\$98,371,544	\$0	\$98,371,544	\$587,819,648	\$500,448,749	\$87,370,899	85.14%	3.03%	\$6,152,059
2007	95,676,254	-	95,676,254	604,999,850	\$538,686,740	66,313,110	89.04%	3.03%	4,333,762
2008	92,886,041	-	92,886,041	622,638,122	\$574,251,633	48,386,489	92.23%	3.03%	2,493,138
2009	89,628,787	-	89,628,787	640,426,351	\$609,694,140	30,732,210	95.20%	3.03%	682,230
2010	85,850,419	-	85,850,419	658,068,589	\$639,948,620	18,119,969	97.25%	3.03%	-
2011	81,233,679	-	81,233,679	675,318,979	\$661,388,558	13,930,421	97.94%	3.03%	-
2012	79,331,099	-	79,331,099	691,875,791	\$681,095,788	10,780,003	98.44%	3.03%	-
2013	76,911,637	-	76,911,637	707,653,708	\$699,724,875	7,928,832	98.88%	3.03%	-
2014	74,196,980	-	74,196,980	722,459,178	\$717,203,381	5,255,797	99.27%	3.03%	-
2015	71,143,938	-	71,143,938	735,991,525	\$733,382,776	2,608,749	99.65%	3.03%	-
2016	67,722,028	-	67,722,028	748,024,599	\$748,147,860	(123,261)	100.02%	3.03%	-
2017	64,409,885	-	64,409,885	758,374,012	\$761,346,796	(2,972,785)	100.39%	3.03%	-
2018	60,994,522	-	60,994,522	766,950,624	\$772,909,587	(5,958,962)	100.78%	3.03%	-
2019	57,455,669	-	57,455,669	773,776,465	\$782,870,020	(9,093,555)	101.18%	3.03%	-
2020	53,821,348	-	53,821,348	778,619,609	\$791,009,658	(12,390,049)	101.59%	3.03%	-
2021	50,151,560	-	50,151,560	781,442,607	\$797,301,483	(15,858,876)	102.03%	3.03%	-
2022	46,467,130	-	46,467,130	782,102,716	\$801,615,773	(19,513,057)	102.49%	3.03%	-
2023	42,905,398	-	42,905,398	780,640,474	\$804,007,618	(23,367,144)	102.99%	3.03%	-
2024	39,181,574	-	39,181,574	776,842,486	\$804,274,616	(27,432,130)	103.53%	3.03%	-
2025	35,527,738	-	35,527,738	770,640,037	\$802,364,287	(31,724,250)	104.12%	3.03%	-
2026	32,011,206	-	32,011,206	761,925,208	\$798,188,837	(36,263,629)	104.76%	3.03%	-
2027	28,698,376	-	28,698,376	750,792,815	\$791,863,116	(41,070,302)	105.47%	3.03%	-
2028	25,539,493	-	25,539,493	737,269,991	\$783,435,520	(46,165,529)	106.26%	3.03%	-
2029	22,535,958	-	22,535,958	721,280,517	\$772,854,571	(51,574,053)	107.15%	3.03%	-
2030	19,657,487	-	19,657,487	702,982,896	\$760,300,222	(57,317,326)	108.15%	3.03%	-
2031	17,001,569	-	17,001,569	682,442,625	\$745,865,924	(63,423,299)	109.29%	3.03%	-
2032	14,569,083	-	14,569,083	659,852,705	\$729,772,605	(69,919,900)	110.60%	3.03%	-
2033	12,364,246	-	12,364,246	635,366,715	\$712,204,942	(76,838,228)	112.09%	3.03%	-
2034	10,421,828	-	10,421,828	609,575,338	\$693,780,722	(84,205,384)	113.81%	3.03%	-
2035	8,700,983	-	8,700,983	582,801,504	\$674,856,163	(92,054,659)	115.80%	3.03%	-
2036	7,181,104	-	7,181,104	555,343,420	\$655,765,464	(100,422,044)	118.08%	3.03%	-

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

GENERAL - SCENARIO 2

Year Ending December 31,	Current	New Hires	Payroll	Total	AAL	AVA	UAAL	Funded %	ER Normal Cost	EE Contribution	Amortization Period	ER UAAL	Total ER Contribution
	\$	\$	\$	\$	\$	\$	\$	%	\$	%		\$	\$
2006	\$98,371,544	50	\$98,371,544	\$98,371,544	\$452,681,589	\$500,448,749	\$47,767,160	110.55%	\$15,183,648	14.70%	20	\$3,220,995	\$11,962,653
2007	95,676,254	7,333,157	103,009,411	103,009,411	475,074,575	539,267,750	\$64,193,176	113.51%	15,196,463	14.05%	20	(4,328,621)	10,867,842
2008	92,886,041	14,722,893	107,608,934	107,608,934	498,881,830	581,348,827	(82,466,997)	116.53%	15,242,267	13.49%	20	(5,560,846)	9,681,421
2009	89,628,787	22,721,379	112,350,166	112,350,166	523,869,030	624,763,809	(100,894,779)	119.26%	15,276,814	12.95%	20	(6,803,452)	8,473,362
2010	85,850,419	31,359,095	117,209,514	117,209,514	549,823,681	664,487,827	(114,664,146)	120.85%	15,309,907	12.44%	20	(7,731,937)	7,577,970
2011	81,233,679	40,950,362	122,184,041	122,184,041	576,572,318	696,978,215	(120,405,898)	120.88%	15,318,213	11.94%	20	(8,119,110)	7,199,103
2012	79,331,099	49,136,275	128,467,374	128,467,374	603,869,535	728,526,336	(124,656,791)	120.64%	15,566,392	11.54%	20	(8,405,752)	7,160,640
2013	76,911,637	58,194,000	135,105,637	135,105,637	631,547,707	759,712,343	(128,164,636)	120.29%	15,789,120	11.13%	20	(8,642,290)	7,146,830
2014	74,196,980	67,893,003	142,089,983	142,089,983	659,488,979	790,880,899	(131,391,919)	119.92%	16,023,487	10.74%	20	(8,859,910)	7,163,577
2015	71,143,938	78,194,407	149,338,345	149,338,345	687,531,005	822,054,209	(134,523,204)	119.25%	16,245,025	10.36%	20	(9,071,056)	7,173,969
2016	67,722,028	89,144,049	156,866,077	156,866,077	715,530,094	853,252,643	(137,722,549)	119.25%	16,437,996	9.98%	20	(9,286,792)	7,151,204
2017	64,409,885	100,414,672	164,824,557	164,824,557	743,446,518	884,435,094	(140,988,576)	118.96%	16,700,848	9.65%	20	(9,507,024)	7,193,824
2018	60,994,522	112,136,194	173,130,716	173,130,716	771,310,904	915,598,156	(144,287,253)	118.71%	16,960,751	9.33%	20	(9,729,457)	7,231,294
2019	57,455,669	124,385,109	181,840,778	181,840,778	799,262,348	946,948,186	(147,685,838)	118.48%	17,241,233	9.03%	20	(9,958,628)	7,282,605
2020	53,821,348	137,170,438	190,991,786	190,991,786	827,173,196	978,350,170	(151,176,973)	118.28%	17,547,370	8.75%	20	(10,194,039)	7,353,331
2021	50,151,560	150,470,011	200,621,571	200,621,571	855,126,006	1,009,885,677	(154,759,671)	118.10%	17,884,410	8.49%	20	(10,435,625)	7,448,785
2022	46,467,130	164,245,224	210,712,354	210,712,354	883,694,238	1,041,527,824	(158,433,586)	117.94%	18,252,958	8.25%	20	(10,683,361)	7,569,597
2023	42,905,398	178,456,900	221,362,298	221,362,298	911,236,869	1,073,432,250	(162,195,381)	117.80%	18,664,162	8.03%	20	(11,197,283)	7,727,139
2024	39,181,574	193,281,822	232,463,396	232,463,396	939,440,444	1,105,495,459	(166,055,015)	117.68%	19,087,569	7.82%	20	(11,465,078)	7,890,286
2025	35,527,738	208,591,921	244,119,659	244,119,659	967,732,875	1,137,759,274	(170,026,399)	117.57%	19,608,912	7.65%	20	(11,738,435)	8,143,834
2026	32,011,206	224,553,694	256,564,900	256,564,900	996,100,956	1,170,181,229	(174,080,273)	117.48%	20,134,899	7.48%	20	(12,020,416)	8,396,464
2027	28,698,376	240,576,810	269,275,186	269,275,186	1,024,729,059	1,202,991,086	(178,262,027)	117.40%	20,753,039	7.34%	20	(12,307,743)	8,732,623
2028	25,539,493	257,315,713	282,855,206	282,855,206	1,053,726,112	1,236,249,183	(182,523,071)	117.32%	21,413,553	7.21%	20	(12,602,872)	9,105,810
2029	22,535,958	274,565,681	297,101,639	297,101,639	1,083,094,706	1,269,994,525	(186,899,819)	117.26%	22,148,927	7.10%	20	(12,905,226)	9,546,055
2030	19,657,487	292,414,149	312,071,636	312,071,636	1,113,053,011	1,304,436,724	(191,383,713)	117.19%	22,904,498	6.99%	20	(13,215,683)	9,999,272
2031	17,001,569	310,802,174	327,803,743	327,803,743	1,143,729,174	1,339,716,936	(195,987,762)	117.14%	23,783,801	6.91%	20	(13,531,136)	10,568,118
2032	14,569,083	329,765,685	344,334,768	344,334,768	1,175,363,210	1,376,029,121	(200,665,911)	117.07%	24,730,123	6.84%	20	(13,855,432)	11,198,987
2033	12,364,246	349,315,110	361,679,356	361,679,356	1,208,141,201	1,413,616,403	(205,475,203)	117.01%	25,785,930	6.79%	20	(14,188,255)	11,930,498
2034	10,421,828	369,465,223	379,887,051	379,887,051	1,242,674,402	1,453,085,353	(210,410,951)	116.93%	26,844,718	6.73%	20	(14,532,242)	12,656,463
2035	8,700,983	390,283,306	398,984,289	398,984,289	1,279,288,947	1,494,801,207	(215,512,259)	116.85%	28,026,651	6.69%	20	(14,882,938)	13,494,409
2036	7,181,104	411,839,760	419,020,864	419,020,864	1,318,290,907	1,539,003,967	(220,713,060)	116.74%	29,258,132	6.65%	20		14,375,194

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

GENERAL – SCENARIO 3

Year Ending December 31,	Payroll		Total	AAAL		AVA	UAAL		Funded %		ER Normal Cost		EE Contribution		Amortization		ER UAAL		Total ER Contribution	
	Current	New Hires																		
2006	\$98,371,544	\$0	\$98,371,544	\$452,681,589	\$500,448,749	\$47,767,160	\$10.55%	\$15,183,648	14.70%	3.03%	20	\$3,220,995	(3.12%)	\$11,962,653	11.58%					
2007	95,676,254	7,333,157	103,009,411	475,095,189	539,267,750	(64,172,561)	113.51%	15,358,703	14.20%	3.03%	20	(4,327,230)	(4.00%)	11,031,473	10.20%					
2008	92,886,041	14,722,893	107,608,934	499,057,930	581,348,827	(82,290,897)	116.49%	15,536,040	13.75%	3.03%	20	(5,548,971)	(4.91%)	9,987,069	8.84%					
2009	89,628,787	22,721,379	112,350,166	524,349,443	624,933,502	(100,584,059)	119.18%	15,736,888	13.34%	3.03%	20	(6,782,500)	(5.75%)	8,954,388	7.59%					
2010	85,850,419	31,359,095	117,209,514	550,780,160	664,987,218	(114,207,058)	120.74%	15,925,257	12.94%	3.03%	20	(7,701,115)	(6.26%)	8,224,142	6.68%					
2011	81,233,679	40,950,362	122,184,041	578,203,107	698,013,897	(119,810,789)	120.72%	16,100,802	12.55%	3.03%	20	(8,078,981)	(6.30%)	8,021,821	6.25%					
2012	79,331,099	49,136,275	128,467,374	606,398,487	730,309,732	(123,911,245)	120.43%	16,510,627	12.24%	3.03%	20	(8,355,479)	(6.19%)	8,155,148	6.05%					
2013	76,911,637	58,194,000	135,105,637	635,197,681	762,482,469	(127,284,788)	120.04%	16,909,822	11.92%	3.03%	20	(8,582,961)	(6.05%)	8,326,861	5.87%					
2014	74,196,980	67,893,003	142,089,983	664,513,616	794,889,412	(130,375,796)	119.62%	17,321,479	11.61%	3.03%	20	(8,791,392)	(5.89%)	8,530,087	5.72%					
2015	71,143,938	78,194,407	149,338,345	694,213,304	827,584,717	(133,371,413)	119.21%	17,734,675	11.31%	3.03%	20	(8,993,390)	(5.74%)	8,741,285	5.57%					
2016	67,722,028	89,144,049	156,866,077	724,183,329	860,608,917	(136,425,588)	118.84%	18,167,445	11.03%	3.03%	20	(9,199,336)	(5.59%)	8,968,109	5.44%					
2017	64,409,885	100,414,672	164,824,557	754,415,341	893,955,317	(139,539,976)	118.50%	18,639,185	10.77%	3.03%	20	(9,409,343)	(5.44%)	9,229,842	5.33%					
2018	60,994,522	112,136,194	173,130,716	784,966,226	927,691,141	(142,724,915)	118.18%	19,124,019	10.52%	3.03%	20	(9,624,107)	(5.29%)	9,499,912	5.23%					
2019	57,455,669	124,385,109	181,840,778	816,003,783	962,014,203	(146,010,420)	117.89%	19,627,894	10.28%	3.03%	20	(9,845,653)	(5.16%)	9,782,241	5.12%					
2020	53,821,348	137,170,438	190,991,786	847,430,157	996,823,921	(149,393,764)	117.63%	20,194,516	10.07%	3.03%	20	(10,073,795)	(5.02%)	10,120,721	5.05%					
2021	50,151,560	150,470,011	200,621,571	879,357,383	1,032,220,882	(152,863,499)	117.38%	20,791,417	9.87%	3.03%	20	(10,307,764)	(4.89%)	10,483,653	4.98%					
2022	46,467,130	164,245,224	210,712,354	911,787,102	1,068,235,436	(156,448,334)	117.16%	21,416,804	9.68%	3.03%	20	(10,549,493)	(4.77%)	10,867,311	4.91%					
2023	42,905,398	178,456,900	221,362,298	944,904,521	1,105,043,181	(160,138,660)	116.95%	22,104,132	9.51%	3.03%	20	(10,798,336)	(4.65%)	11,305,796	4.86%					
2024	39,181,574	193,281,822	232,463,396	978,622,117	1,142,555,435	(163,933,318)	116.75%	22,822,094	9.35%	3.03%	20	(11,054,214)	(4.53%)	11,767,880	4.82%					
2025	35,527,738	208,591,921	244,119,659	1,012,993,309	1,180,849,083	(167,855,775)	116.57%	23,581,959	9.20%	3.03%	20	(11,318,710)	(4.42%)	12,263,249	4.78%					
2026	32,011,206	224,353,694	256,364,900	1,048,026,691	1,219,915,869	(171,889,178)	116.40%	24,441,830	9.08%	3.03%	20	(11,590,687)	(4.31%)	12,851,143	4.77%					
2027	28,698,376	240,576,810	269,275,186	1,083,923,724	1,259,938,587	(176,014,863)	116.24%	25,361,683	8.97%	3.03%	20	(11,868,887)	(4.20%)	13,492,796	4.77%					
2028	25,339,493	257,315,713	282,655,206	1,120,811,625	1,301,082,806	(180,271,181)	116.08%	26,314,020	8.86%	3.03%	20	(12,155,895)	(4.09%)	14,158,125	4.77%					
2029	22,535,958	274,565,681	297,101,639	1,158,709,642	1,343,369,029	(184,659,387)	115.94%	27,389,800	8.78%	3.03%	20	(12,451,797)	(3.99%)	14,938,003	4.79%					
2030	19,657,487	292,414,149	312,071,636	1,197,851,327	1,387,001,200	(189,149,873)	115.79%	28,540,511	8.71%	3.03%	20	(12,754,596)	(3.89%)	15,785,915	4.82%					
2031	17,001,569	310,802,174	327,803,743	1,238,377,641	1,432,172,903	(193,795,262)	115.65%	29,703,936	8.63%	3.03%	20	(13,067,840)	(3.80%)	16,636,096	4.83%					
2032	14,569,083	329,765,685	344,334,768	1,280,538,117	1,479,138,753	(198,600,635)	115.51%	31,021,119	8.58%	3.03%	20	(13,391,872)	(3.70%)	17,629,247	4.88%					
2033	12,364,246	349,315,110	361,679,356	1,324,520,386	1,528,023,239	(203,502,853)	115.36%	32,393,812	8.53%	3.03%	20	(13,722,434)	(3.61%)	18,671,378	4.92%					
2034	10,421,828	369,465,223	379,887,051	1,370,941,847	1,579,511,072	(208,569,226)	115.21%	33,865,031	8.49%	3.03%	20	(14,064,066)	(3.53%)	19,800,965	4.96%					
2035	8,700,983	390,283,306	398,984,289	1,420,128,459	1,633,906,693	(213,778,234)	115.05%	35,441,774	8.46%	3.03%	20	(14,415,315)	(3.44%)	21,026,459	5.02%					
2036	7,181,104	411,839,760	419,020,864	1,472,388,073	1,691,535,134	(219,147,062)	114.88%	37,133,629	8.44%	3.03%	20	(14,777,341)	(3.36%)	22,356,288	5.08%					

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

GENERAL – SCENARIO 4

Year Ending December 31,	Payroll		Total	AAI	AVA	UAAL	Funded %	ER Normal Cost		EE Contribution	Amortization Period	ER UAAL		Total ER Contribution	
	Current	New Hires						\$	%			\$	%	\$	%
2006	\$98,371,544	\$0	\$98,371,544	\$452,681,589	\$500,448,749	\$47,767,160	110.55%	\$15,183,648	14.70%	3.03%	20	\$3,220,995	(3.12%)	\$11,962,653	11.58%
2007	95,676,254	7,333,157	103,009,411	475,115,733	539,267,750	(64,152,017)	113.50%	15,510,127	14.34%	3.03%	20	(4,325,845)	(4.00%)	11,184,282	10.34%
2008	92,886,041	14,722,893	107,608,934	499,233,910	581,348,827	(82,114,917)	116.45%	15,841,111	14.02%	3.03%	20	(5,537,104)	(4.90%)	10,304,007	9.12%
2009	89,628,787	22,721,379	112,350,166	524,829,873	625,091,972	(100,262,099)	119.10%	16,196,962	13.73%	3.03%	20	(6,760,790)	(5.73%)	9,436,172	8.00%
2010	85,850,419	31,359,095	117,209,514	551,736,877	665,486,254	(113,749,376)	120.62%	16,540,607	13.44%	3.03%	20	(7,670,253)	(6.23%)	8,870,354	7.21%
2011	81,233,679	40,950,362	122,184,041	579,834,302	699,049,982	(119,215,680)	120.56%	16,883,391	13.16%	3.03%	20	(8,038,852)	(6.27%)	8,844,539	6.89%
2012	79,331,099	49,136,275	128,467,374	608,928,341	732,093,614	(123,165,273)	120.23%	17,454,862	12.94%	3.03%	20	(8,305,178)	(6.16%)	9,149,684	6.78%
2013	76,911,637	58,194,000	135,105,637	638,849,131	765,253,107	(126,403,975)	119.79%	18,030,523	12.71%	3.03%	20	(8,523,567)	(6.01%)	9,506,956	6.70%
2014	74,196,980	67,893,003	142,089,983	669,540,394	798,898,505	(129,358,111)	119.32%	18,634,391	12.49%	3.03%	20	(8,722,768)	(5.85%)	9,911,623	6.64%
2015	71,143,938	78,194,407	149,338,345	700,898,563	833,115,914	(132,217,351)	118.86%	19,255,686	12.28%	3.03%	20	(8,915,570)	(5.69%)	10,340,116	6.59%
2016	67,722,028	89,144,049	156,866,077	732,840,448	867,981,515	(135,141,066)	118.44%	19,896,893	12.08%	3.03%	20	(9,112,719)	(5.53%)	10,784,174	6.55%
2017	64,409,885	100,414,672	164,824,557	765,389,145	903,525,771	(138,136,626)	118.05%	20,577,522	11.89%	3.03%	20	(9,314,713)	(5.38%)	11,262,809	6.51%
2018	60,994,522	112,136,194	173,130,716	798,627,897	939,837,254	(141,209,357)	117.68%	21,287,287	11.71%	3.03%	20	(9,521,911)	(5.24%)	11,765,376	6.47%
2019	57,455,669	124,385,109	181,840,778	832,753,125	977,134,169	(144,381,044)	117.34%	22,033,647	11.54%	3.03%	20	(9,735,782)	(5.10%)	12,297,865	6.44%
2020	53,821,348	137,170,438	190,991,786	867,696,512	1,015,352,141	(147,655,630)	117.02%	22,821,609	11.38%	3.03%	20	(9,956,591)	(4.96%)	12,865,018	6.42%
2021	50,151,560	150,470,011	200,621,571	903,599,326	1,054,630,382	(151,031,056)	116.71%	23,677,358	11.24%	3.03%	20	(10,184,200)	(4.83%)	13,493,158	6.41%
2022	46,467,130	164,245,224	210,712,354	940,491,674	1,094,997,936	(154,506,261)	116.43%	24,580,650	11.11%	3.03%	20	(10,418,537)	(4.71%)	14,162,113	6.40%
2023	42,905,398	178,456,900	221,362,298	978,584,681	1,136,685,208	(158,100,527)	116.16%	25,544,102	10.99%	3.03%	20	(10,660,902)	(4.59%)	14,883,200	6.40%
2024	39,181,574	193,281,822	232,463,396	1,017,816,249	1,179,643,274	(161,827,025)	115.90%	26,556,618	10.88%	3.03%	20	(10,912,185)	(4.47%)	15,644,433	6.41%
2025	35,527,738	208,591,921	244,119,659	1,058,264,367	1,223,963,081	(165,698,714)	115.66%	27,606,272	10.77%	3.03%	20	(11,173,257)	(4.36%)	16,433,015	6.41%
2026	32,011,206	224,353,694	256,364,900	1,099,960,315	1,269,670,017	(169,709,702)	115.43%	28,748,760	10.68%	3.03%	20	(11,443,723)	(4.25%)	17,305,037	6.43%
2027	28,698,376	240,576,810	269,275,186	1,143,123,262	1,316,953,734	(173,830,473)	115.21%	29,970,328	10.60%	3.03%	20	(11,721,591)	(4.15%)	18,248,737	6.45%
2028	25,539,493	257,315,713	282,855,206	1,187,896,446	1,365,980,306	(178,083,860)	114.99%	31,244,186	10.52%	3.03%	20	(12,008,402)	(4.04%)	19,255,784	6.48%
2029	22,535,958	274,565,681	297,101,639	1,234,314,625	1,416,796,376	(182,481,750)	114.78%	32,630,673	10.46%	3.03%	20	(12,304,957)	(3.94%)	20,325,716	6.52%
2030	19,657,487	292,414,149	312,071,636	1,282,627,681	1,469,635,262	(187,007,581)	114.58%	34,110,990	10.41%	3.03%	20	(12,610,139)	(3.85%)	21,500,851	6.56%
2031	17,001,569	310,802,174	327,803,743	1,332,988,442	1,524,682,869	(191,694,427)	114.38%	35,658,491	10.36%	3.03%	20	(12,926,178)	(3.76%)	22,733,313	6.60%
2032	14,569,083	329,765,685	344,334,768	1,385,658,644	1,582,215,650	(196,557,006)	114.19%	37,275,960	10.31%	3.03%	20	(13,254,068)	(3.67%)	24,021,892	6.64%
2033	12,364,246	349,315,110	361,679,356	1,440,828,111	1,642,408,505	(201,580,394)	113.99%	39,039,670	10.28%	3.03%	20	(13,592,801)	(3.58%)	25,446,869	6.70%
2034	10,421,828	369,465,223	379,887,051	1,499,111,501	1,705,850,936	(206,739,434)	113.79%	40,885,344	10.25%	3.03%	20	(13,940,681)	(3.49%)	26,944,663	6.76%
2035	8,700,983	390,283,306	398,984,289	1,560,840,539	1,772,930,603	(212,090,064)	113.59%	42,856,897	10.23%	3.03%	20	(14,301,480)	(3.41%)	28,555,417	6.82%
2036	7,181,104	411,839,760	419,020,864	1,626,319,010	1,843,945,670	(217,626,660)	113.38%	44,921,132	10.21%	3.03%	20	(14,674,819)	(3.34%)	30,246,313	6.87%

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

SHERIFF - BASELINE

Year Ending December 31,	Payroll		Total	ER Normal Cost		EE Contribution	Amortization Period	ER UAAL		Total ER Contribution
	Current	New Hires		\$	%			\$	%	
2006	\$29,230,392	\$0	\$29,230,392	\$170,139,724	\$180,778,889	\$10,639,165	106.25%	\$3,220,694	17.01%	\$4,503,283
2007	30,382,906	648,208	31,031,114	180,849,168	197,274,445	(16,425,278)	109.08%	5,539,054	17.00%	4,431,478
2008	31,585,782	1,346,805	32,932,587	192,715,949	214,448,101	(21,732,152)	111.28%	5,875,009	16.99%	4,409,585
2009	32,574,916	2,221,604	34,796,520	205,762,587	232,868,098	(27,105,510)	113.17%	6,203,872	16.98%	4,376,116
2010	33,555,957	3,320,755	36,876,712	219,885,805	250,787,552	(30,901,747)	114.05%	6,535,240	16.97%	4,451,499
2011	34,175,647	4,492,066	38,667,713	235,204,627	267,084,127	(31,879,500)	113.55%	6,885,946	16.96%	4,736,274
2012	34,072,544	6,240,984	40,313,528	251,342,021	283,758,887	(32,416,866)	112.90%	7,179,033	16.96%	4,993,126
2013	33,537,723	8,397,070	41,934,793	267,679,229	300,515,617	(32,836,387)	112.27%	7,467,748	16.96%	5,253,552
2014	33,061,591	10,739,475	43,801,066	284,148,306	317,298,845	(33,150,539)	111.67%	7,800,094	16.96%	5,564,715
2015	33,007,194	13,026,297	46,033,491	301,119,521	334,482,462	(33,362,941)	111.08%	8,197,644	16.96%	5,947,942
2016	32,407,738	15,755,147	48,162,885	318,687,912	352,205,594	(33,517,682)	110.52%	8,571,789	16.95%	6,311,653
2017	32,246,793	18,409,334	50,656,127	336,889,082	370,586,514	(33,697,433)	110.00%	9,010,205	16.94%	6,737,948
2018	32,416,715	21,036,516	53,453,231	356,069,847	389,890,915	(33,821,069)	109.50%	9,507,726	16.94%	7,227,132
2019	32,426,884	23,903,819	56,330,703	376,717,506	410,617,801	(33,900,295)	109.00%	10,013,627	16.93%	7,727,691
2020	31,769,966	27,318,931	59,088,897	398,456,987	432,455,817	(33,998,829)	108.53%	10,503,938	16.93%	8,211,357
2021	31,001,487	30,961,114	61,962,601	421,194,954	455,343,495	(34,148,541)	108.11%	11,008,276	16.92%	8,705,600
2022	29,408,408	35,335,765	64,744,173	444,639,878	478,964,566	(34,324,688)	107.72%	11,495,652	16.91%	9,181,098
2023	28,331,543	39,607,810	67,939,353	468,834,707	503,380,796	(34,546,090)	107.37%	12,055,838	16.90%	9,726,355
2024	25,621,228	45,025,742	70,646,970	493,557,093	528,314,122	(34,757,030)	107.04%	12,528,887	16.89%	10,185,180
2025	23,258,367	50,547,079	73,805,446	518,549,414	553,637,899	(35,088,485)	106.77%	13,081,277	16.88%	10,715,220
2026	21,171,984	56,232,908	77,404,892	544,162,298	579,537,515	(35,375,217)	106.50%	13,719,243	16.88%	11,333,851
2027	18,074,459	62,874,394	80,948,853	570,531,272	606,149,154	(35,617,882)	106.24%	14,347,375	16.88%	11,945,620
2028	14,493,535	70,127,595	84,621,130	597,133,706	633,049,084	(35,915,378)	106.01%	15,007,134	16.89%	12,585,318
2029	11,058,191	77,721,649	88,779,840	623,613,674	659,839,688	(36,226,014)	105.81%	15,763,304	16.91%	13,320,542
2030	8,423,775	85,204,208	93,627,983	650,878,613	687,352,466	(36,473,853)	105.60%	16,633,947	16.92%	14,174,473
2031	5,579,769	93,159,663	98,739,432	679,758,902	716,389,440	(36,630,538)	105.39%	17,562,783	16.94%	15,092,743
2032	3,521,212	100,572,192	104,093,404	710,154,494	746,924,543	(36,770,049)	105.18%	18,526,024	16.95%	16,046,577
2033	2,334,622	107,537,615	109,872,237	742,743,573	779,654,084	(36,910,512)	104.97%	19,554,511	16.95%	17,065,592
2034	1,471,347	114,413,649	115,884,996	777,729,993	814,749,238	(37,019,246)	104.76%	20,636,800	16.96%	18,140,549
2035	938,202	121,214,282	122,152,484	815,278,197	852,397,242	(37,119,045)	104.55%	21,752,914	16.96%	19,249,934
2036	552,413	128,101,239	128,653,652	855,541,871	892,767,352	(37,225,481)	104.35%	22,910,642	16.96%	20,400,484

Gabriel Roeder Smith & Company

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM **30 YEAR PROJECTIONS** **SHERIFF – SCENARIO 1**

Year Ending December 31,	Payroll		Total	Unfunded		Funded % Contribution	EE	Total ER Contribution
	Current	New Hires		PVFB	AVA			
2006	\$29,230,392	\$0	\$29,230,392	\$242,914,252	\$180,778,889	\$62,135,363	74.42%	\$3,929,196
2007	30,382,906	-	30,382,906	252,739,269	\$197,201,980	55,537,289	78.03%	3,614,921
2008	31,585,782	-	31,585,782	263,211,019	\$213,721,890	49,489,130	81.20%	3,227,164
2009	32,574,916	-	32,574,916	274,298,998	\$231,154,584	43,144,414	84.27%	2,797,868
2010	33,355,957	-	33,355,957	285,857,233	\$247,591,884	38,265,349	86.61%	2,439,500
2011	34,175,647	-	34,175,647	297,933,056	\$261,841,747	36,091,309	87.89%	2,346,961
2012	34,072,544	-	34,072,544	310,143,084	\$275,802,056	34,341,029	88.93%	2,282,948
2013	33,537,723	-	33,537,723	321,899,733	\$289,167,663	32,732,070	89.83%	2,264,543
2014	33,061,591	-	33,061,591	333,072,611	\$301,885,497	31,187,114	90.64%	2,217,217
2015	33,007,194	-	33,007,194	343,913,142	\$314,323,392	29,589,749	91.40%	2,208,834
2016	32,407,738	-	32,407,738	354,413,956	\$326,470,115	27,943,841	92.12%	2,219,118
2017	32,246,793	-	32,246,793	364,530,714	\$338,350,855	26,179,859	92.82%	2,214,051
2018	32,416,715	-	32,416,715	374,457,703	\$350,202,581	24,255,122	93.52%	2,162,785
2019	32,426,884	-	32,426,884	384,546,282	\$362,363,119	22,183,163	94.23%	2,108,235
2020	31,769,966	-	31,769,966	394,320,896	\$374,303,168	20,017,728	94.92%	1,994,321
2021	31,001,487	-	31,001,487	403,596,995	\$385,840,583	17,756,412	95.60%	1,918,406
2022	29,408,408	-	29,408,408	411,959,111	\$396,479,481	15,479,629	96.24%	1,717,291
2023	28,331,543	-	28,331,543	419,325,001	\$406,199,048	13,125,953	96.87%	1,550,867
2024	25,621,228	-	25,621,228	425,324,126	\$414,444,903	10,879,223	97.44%	1,383,646
2025	23,238,367	-	23,238,367	429,605,288	\$420,911,875	8,693,414	97.98%	1,130,497
2026	21,171,984	-	21,171,984	432,283,918	\$425,716,828	6,567,090	98.48%	851,319
2027	18,074,459	-	18,074,459	433,276,748	\$428,642,140	4,634,608	98.93%	578,284
2028	14,493,535	-	14,493,535	431,889,759	\$428,942,755	2,947,003	99.32%	332,251
2029	11,058,191	-	11,058,191	427,531,396	\$426,027,968	1,503,429	99.65%	68,650
2030	8,423,775	-	8,423,775	420,801,531	\$420,525,112	276,419	99.93%	-
2031	5,579,769	-	5,579,769	412,211,998	\$412,891,468	(679,470)	100.16%	-
2032	3,521,212	-	3,521,212	401,705,772	\$403,281,641	(1,575,869)	100.39%	-
2033	2,334,622	-	2,334,622	390,157,261	\$392,654,023	(2,496,763)	100.64%	-
2034	1,471,347	-	1,471,347	377,823,449	\$381,274,559	(3,451,110)	100.91%	-
2035	938,202	-	938,202	364,944,595	\$369,394,023	(4,449,429)	101.22%	-
2036	552,413	-	552,413	351,691,858	\$357,189,109	(5,497,251)	101.56%	-

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

SHERIFF – SCENARIO 2

Year Ending December 31,	Payroll		Total	ER Normal Cost				EE Contribution	Amortization Period	ER UAAL		Total ER Contribution		
	Current	New Hires		AAL	AVA	UAAL	Funded %			\$	%	\$	%	
2006	\$29,230,392	\$0	\$29,230,392	\$170,139,724	\$180,778,889	106.25%	\$5,220,694	17.01%	3.83%	20	\$(717,411)	(2.34%)	\$4,503,283	14.67%
2007	30,382,906	648,208	31,031,114	180,787,632	197,274,445	109.12%	5,467,372	16.78%	3.83%	20	(1,111,725)	(3.41%)	4,355,647	13.37%
2008	31,585,782	1,346,805	32,932,587	192,517,453	214,448,101	111.39%	5,726,318	16.56%	3.83%	20	(1,478,809)	(4.28%)	4,247,509	12.28%
2009	32,574,916	2,221,604	34,796,520	205,328,959	232,789,457	113.37%	5,959,078	16.31%	3.83%	20	(1,851,693)	(5.07%)	4,107,385	11.24%
2010	33,355,957	3,320,755	36,676,712	219,089,366	250,534,934	114.35%	6,177,092	16.04%	3.83%	20	(2,120,411)	(5.51%)	4,056,681	10.53%
2011	34,175,647	4,492,066	38,667,713	233,898,708	266,533,876	113.95%	6,402,793	15.77%	3.83%	20	(2,200,627)	(5.42%)	4,202,166	10.35%
2012	34,072,544	6,240,984	40,313,528	249,313,662	282,757,921	113.41%	6,501,766	15.36%	3.83%	20	(2,255,185)	(5.33%)	4,246,581	10.03%
2013	33,537,723	8,397,070	41,934,793	264,657,454	298,885,683	112.93%	6,560,698	14.90%	3.83%	20	(2,308,049)	(5.24%)	4,252,649	9.66%
2014	33,061,591	10,739,475	43,801,066	279,821,070	314,772,463	112.49%	6,645,717	14.45%	3.83%	20	(2,356,813)	(5.12%)	4,288,904	9.33%
2015	33,007,194	13,026,297	46,033,491	295,154,504	330,728,636	112.05%	6,791,091	14.05%	3.83%	20	(2,398,805)	(4.96%)	4,392,286	9.09%
2016	32,407,738	15,755,147	48,162,885	310,685,778	346,847,260	111.64%	6,882,717	13.61%	3.83%	20	(2,438,411)	(4.82%)	4,444,306	8.79%
2017	32,246,793	18,409,334	50,656,127	326,424,220	363,213,494	111.27%	7,047,534	13.25%	3.83%	20	(2,480,744)	(4.66%)	4,566,790	8.59%
2018	32,416,715	21,036,516	53,453,231	342,688,309	380,029,810	110.90%	7,262,690	12.94%	3.83%	20	(2,517,981)	(4.49%)	4,744,709	8.45%
2019	32,426,884	23,903,819	56,330,703	359,910,255	397,768,769	110.52%	7,452,552	12.60%	3.83%	20	(2,552,844)	(4.32%)	4,899,708	8.28%
2020	31,769,966	27,318,931	59,088,897	377,622,781	416,075,018	110.18%	7,575,492	12.21%	3.83%	20	(2,592,879)	(4.18%)	4,982,613	8.03%
2021	31,001,487	30,961,114	61,962,601	395,662,916	434,812,244	109.89%	7,677,166	11.80%	3.83%	20	(2,639,885)	(4.06%)	5,037,281	7.74%
2022	29,408,408	35,335,765	64,744,173	413,620,218	453,562,515	109.66%	7,715,887	11.35%	3.83%	20	(2,693,356)	(3.96%)	5,022,531	7.39%
2023	28,331,543	39,607,810	67,939,353	431,485,702	472,295,899	109.46%	7,775,659	10.90%	3.83%	20	(2,751,879)	(3.86%)	5,023,780	7.04%
2024	25,621,228	45,025,742	70,646,970	448,867,685	490,624,391	109.30%	7,692,395	10.37%	3.83%	20	(2,815,703)	(3.80%)	4,876,692	6.57%
2025	23,258,367	50,547,079	73,805,446	465,420,088	508,300,966	109.21%	7,672,076	9.90%	3.83%	20	(2,891,508)	(3.73%)	4,780,568	6.17%
2026	21,171,984	56,232,908	77,404,892	481,399,628	525,373,852	109.13%	7,672,373	9.44%	3.83%	20	(2,965,233)	(3.65%)	4,707,140	5.79%
2027	18,074,459	62,874,394	80,948,853	496,768,306	541,876,875	109.08%	7,581,670	8.92%	3.83%	20	(3,041,723)	(3.58%)	4,539,947	5.34%
2028	14,493,535	70,127,595	84,621,130	510,841,599	557,229,395	109.08%	7,490,239	8.43%	3.83%	20	(3,127,983)	(3.52%)	4,362,256	4.91%
2029	11,058,191	77,721,649	88,779,840	523,121,895	570,846,095	109.12%	7,485,472	8.03%	3.83%	20	(3,218,098)	(3.45%)	4,267,374	4.58%
2030	8,423,775	85,204,208	93,627,983	534,414,050	583,410,895	109.17%	7,569,822	7.70%	3.83%	20	(3,303,914)	(3.36%)	4,265,908	4.34%
2031	5,579,769	93,159,663	98,739,432	545,387,762	595,597,044	109.21%	7,703,157	7.43%	3.83%	20	(3,385,670)	(3.27%)	4,317,487	4.16%
2032	3,521,212	100,572,192	104,093,404	555,976,937	607,386,991	109.25%	7,935,040	7.26%	3.83%	20	(3,466,640)	(3.17%)	4,468,400	4.09%
2033	2,334,622	107,537,615	109,872,237	567,037,940	619,565,154	109.26%	8,248,658	7.15%	3.83%	20	(3,541,971)	(3.07%)	4,706,687	4.08%
2034	1,471,347	114,413,649	115,884,996	578,865,087	632,437,710	109.25%	8,627,059	7.09%	3.83%	20	(3,612,464)	(2.97%)	5,014,595	4.12%
2035	938,202	121,214,282	122,152,484	591,699,786	646,279,769	109.22%	9,042,338	7.05%	3.83%	20	(3,680,392)	(2.87%)	5,361,946	4.18%
2036	552,413	128,101,239	128,653,652	605,725,455	661,299,325	109.17%	9,496,569	7.03%	3.83%	20	(3,747,411)	(2.77%)	5,749,158	4.26%

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

SHERIFF – SCENARIO 3

Year Ending December 31,	Payroll		Total	ER Normal Cost		EE Contribution	Amortization Period	ER UAAL		Total ER Contribution	
	Current	New Hires		\$	%			\$	%	\$	%
2006	\$29,230,392	\$0	\$29,230,392	\$170,139,724	106.23%	\$5,220,694	17.01%	\$7,117,411	(2.34%)	\$4,503,283	14.67%
2007	30,382,906	648,208	31,031,114	180,778,889	109.12%	5,483,663	16.83%	(1,111,374)	(3.41%)	4,372,289	13.42%
2008	31,385,782	1,346,805	32,932,587	197,274,445	111.38%	5,757,440	16.65%	(1,477,073)	(4.27%)	4,280,367	12.38%
2009	32,574,916	2,221,604	34,796,520	203,393,873	113.35%	6,010,229	16.45%	(1,848,480)	(5.06%)	4,161,749	11.39%
2010	33,355,957	3,320,755	36,676,712	232,806,716	114.31%	6,254,113	16.24%	(2,115,297)	(5.49%)	4,138,816	10.73%
2011	34,175,647	4,492,066	38,667,713	250,587,562	113.89%	6,504,296	16.02%	(2,193,274)	(5.40%)	4,311,022	10.62%
2012	34,072,544	6,240,984	40,313,528	266,646,828	113.34%	6,645,685	15.70%	(2,245,285)	(5.30%)	4,400,400	10.40%
2013	33,537,723	8,397,070	41,934,793	282,964,524	112.83%	6,750,034	15.33%	(2,294,415)	(5.21%)	4,455,619	10.12%
2014	33,061,591	10,739,475	43,801,066	299,220,669	112.36%	6,889,470	14.98%	(2,338,947)	(5.09%)	4,550,523	9.89%
2015	33,007,194	13,026,297	46,033,491	315,292,092	111.90%	7,090,769	14.67%	(2,376,319)	(4.92%)	4,714,450	9.75%
2016	32,407,738	15,755,147	48,162,885	331,497,722	111.45%	7,241,771	14.32%	(2,411,368)	(4.77%)	4,830,403	9.55%
2017	32,246,793	18,409,334	50,656,127	347,945,316	111.06%	7,467,726	14.04%	(2,448,962)	(4.60%)	5,018,764	9.44%
2018	32,416,715	21,036,516	53,453,231	364,727,908	110.66%	7,739,761	13.79%	(2,481,588)	(4.42%)	5,258,173	9.37%
2019	32,436,884	23,903,819	56,340,703	382,057,923	109.90%	7,990,792	13.51%	(2,512,006)	(4.25%)	5,478,786	9.26%
2020	31,769,966	27,318,931	59,088,897	400,665,330	109.58%	8,379,822	12.88%	(2,587,792)	(3.98%)	5,792,030	8.90%
2021	31,001,487	30,961,114	61,962,601	419,453,166	109.31%	8,511,269	12.52%	(2,634,861)	(3.88%)	5,876,408	8.64%
2022	29,408,408	35,335,765	64,744,173	439,042,130	108.88%	8,681,630	12.17%	(2,686,137)	(3.77%)	5,995,493	8.40%
2023	28,331,543	39,607,810	67,939,353	458,797,248	108.63%	8,848,393	11.37%	(2,742,049)	(3.70%)	5,966,603	8.04%
2024	25,621,228	45,025,742	70,646,970	478,700,751	108.52%	9,009,607	10.60%	(2,809,358)	(3.63%)	6,001,905	7.74%
2025	23,258,367	50,547,079	73,805,446	498,387,301	108.47%	9,228,664	9.90%	(2,873,804)	(3.54%)	6,074,589	7.47%
2026	21,171,984	56,232,908	77,404,892	517,642,876	108.45%	9,486,855	9.65%	(2,940,417)	(3.46%)	6,069,190	7.14%
2027	18,074,459	62,874,394	80,948,853	536,531,344	108.42%	9,787,052	9.44%	(3,015,933)	(3.39%)	6,064,760	6.83%
2028	14,493,535	70,127,595	84,621,130	555,116,652	108.39%	10,164,721	9.30%	(3,094,693)	(3.32%)	6,133,971	6.58%
2029	11,058,191	77,721,649	88,779,840	572,851,823	108.35%	10,636,731	9.22%	(3,169,037)	(3.22%)	6,317,818	6.43%
2030	8,423,775	85,204,208	93,627,983	589,187,997	108.30%	11,157,987	9.17%	(3,238,397)	(3.12%)	6,548,655	6.32%
2031	5,579,769	93,159,663	98,739,432	604,843,457	108.22%	11,722,974	9.14%	(3,307,576)	(3.03%)	6,857,145	6.27%
2032	3,521,212	100,572,192	104,093,404	620,506,521	108.01%	12,333,382	9.13%	(3,372,032)	(2.92%)	7,264,699	6.30%
2033	2,334,622	107,537,615	109,872,237	636,175,222	108.01%	12,333,382	9.13%	(3,431,646)	(2.82%)	7,726,341	6.35%
2034	1,471,347	114,413,649	115,884,996	652,612,461	108.01%	12,333,382	9.13%	(3,489,684)	(2.72%)	8,233,290	6.42%
2035	938,202	121,214,282	122,152,484	670,097,535	108.01%	12,333,382	9.13%	(3,546,809)	(2.63%)	8,786,573	6.50%
2036	552,413	128,101,239	128,653,652	688,906,383	108.01%	12,333,382	9.13%				

MACOMB COUNTY EMPLOYEES' RETIREMENT SYSTEM

30 YEAR PROJECTIONS

SHERIFF – SCENARIO 4

Year Ending December 31,	Current	New Hires	Payroll	Total	AAI	AVA	UAAL	Funded %	ER Normal Cost	EE Contribution	Amortization Period	ER UAAL	Total ER Contribution
									\$	%		\$	%
2006	\$29,230,392	\$0	\$170,139,724	\$29,230,392	\$170,139,724	\$180,778,889	\$(10,639,165)	106.23%	\$5,220,694	17.01%	20	\$(717,411)	\$4,503,283
2007	30,382,906	648,208	180,798,032	31,031,114	180,798,032	197,274,445	(16,476,413)	109.11%	5,496,696	16.87%	20	(1,111,024)	4,385,672
2008	31,585,782	1,346,805	192,568,931	32,932,587	192,568,931	214,448,101	(21,879,169)	111.36%	5,788,561	16.74%	20	(1,475,338)	4,313,223
2009	32,574,916	2,221,604	205,458,757	34,796,520	205,458,757	232,820,595	(27,361,839)	113.32%	6,061,380	16.59%	20	(1,845,041)	4,216,339
2010	33,355,957	3,320,755	219,346,273	36,676,712	219,346,273	250,636,355	(31,290,282)	114.27%	6,327,283	16.43%	20	(2,109,940)	4,217,343
2011	34,175,647	4,492,066	234,342,668	38,667,713	234,342,668	266,756,109	(32,413,441)	113.83%	6,605,799	16.27%	20	(2,185,676)	4,420,123
2012	34,072,544	6,240,984	250,020,450	40,313,528	250,020,450	283,163,436	(33,142,986)	113.26%	6,789,604	16.04%	20	(2,234,870)	4,554,734
2013	33,537,723	8,397,070	41,934,793	41,934,793	265,731,793	299,547,643	(33,815,850)	112.73%	6,943,773	15.77%	20	(2,280,242)	4,663,531
2014	33,061,591	10,739,475	43,801,066	43,801,066	281,390,239	315,803,640	(34,413,401)	112.23%	7,133,223	15.51%	20	(2,320,536)	4,812,687
2015	33,007,194	13,026,297	46,033,491	46,033,491	297,359,646	332,263,247	(34,903,601)	111.74%	7,385,613	15.28%	20	(2,353,590)	5,032,023
2016	32,407,738	15,755,147	313,684,071	313,684,071	349,040,111	355,356,040	(11,279,769)	111.27%	7,595,769	15.02%	20	(2,384,099)	5,211,670
2017	32,246,793	18,409,334	330,395,891	330,395,891	366,234,055	366,234,055	(35,838,164)	110.85%	7,882,600	14.82%	20	(2,416,609)	5,465,991
2018	32,416,715	21,036,516	347,824,292	347,824,292	384,072,138	384,072,138	(36,247,846)	110.42%	8,211,218	14.63%	20	(2,444,234)	5,766,984
2019	32,426,884	23,903,819	366,418,640	366,418,640	403,045,491	403,045,491	(36,626,851)	110.00%	8,540,861	14.44%	20	(2,469,791)	6,071,070
2020	31,769,966	27,318,931	385,742,247	385,742,247	422,805,137	422,805,137	(37,062,890)	109.61%	8,816,359	14.21%	20	(2,499,194)	6,317,165
2021	31,001,487	30,961,114	405,668,776	405,668,776	443,257,571	443,257,571	(37,588,795)	109.27%	9,088,984	13.97%	20	(2,534,656)	6,554,328
2022	29,408,408	35,335,765	425,825,955	425,825,955	446,246,861	446,246,861	(38,192,381)	108.97%	9,320,247	13.71%	20	(2,573,357)	6,744,890
2023	28,331,543	39,607,810	446,246,861	446,246,861	485,098,681	485,098,681	(38,851,820)	108.71%	9,587,601	13.44%	20	(2,619,823)	6,967,778
2024	25,621,228	45,023,742	466,580,323	466,580,323	506,158,207	506,158,207	(39,577,884)	108.48%	9,732,327	13.12%	20	(2,668,783)	7,063,544
2025	23,258,367	50,547,079	486,543,049	486,543,049	526,993,869	526,993,869	(40,450,820)	108.31%	9,958,200	12.85%	20	(2,727,646)	7,230,554
2026	21,171,984	56,232,908	506,429,532	506,429,532	547,705,908	547,705,908	(41,276,376)	108.15%	10,224,412	12.58%	20	(2,783,314)	7,441,098
2027	18,074,459	62,874,394	526,256,419	526,256,419	568,382,385	568,382,385	(42,125,966)	108.00%	10,437,545	12.28%	20	(2,840,603)	7,596,942
2028	14,493,535	70,121,595	545,415,224	545,415,224	588,501,961	588,501,961	(43,086,738)	107.90%	10,662,262	12.00%	20	(2,905,389)	7,756,873
2029	11,058,191	77,721,649	563,473,261	563,473,261	607,559,262	607,559,262	(44,086,002)	107.82%	10,981,178	11.78%	20	(2,972,770)	8,008,408
2030	8,423,775	85,204,208	581,289,525	581,289,525	626,298,116	626,298,116	(45,008,591)	107.74%	11,403,888	11.60%	20	(3,034,982)	8,368,906
2031	5,579,769	93,159,663	599,587,003	599,587,003	645,448,819	645,448,819	(45,861,816)	107.65%	11,870,948	11.45%	20	(3,092,516)	8,778,432
2032	3,521,212	100,572,192	618,285,057	618,285,057	664,997,850	664,997,850	(46,712,792)	107.56%	12,403,331	11.35%	20	(3,149,898)	9,255,433
2033	2,334,622	107,537,615	638,186,013	638,186,013	685,692,778	685,692,778	(47,506,765)	107.44%	13,024,804	11.29%	20	(3,203,436)	9,821,368
2034	1,471,347	114,413,649	659,557,086	659,557,086	707,797,227	707,797,227	(48,240,142)	107.31%	13,701,083	11.26%	20	(3,252,889)	10,448,194
2035	938,202	121,214,282	682,614,495	682,614,495	731,568,767	731,568,767	(48,954,272)	107.17%	14,416,436	11.24%	20	(3,301,043)	11,115,393
2036	552,413	128,101,239	707,533,648	707,533,648	757,200,374	757,200,374	(49,666,727)	107.02%	15,170,195	11.23%	20	(3,349,085)	11,821,110



Plante & Moran, PLLC
 Suite 500
 2601 Cambridge Court
 Auburn Hills, MI 48326
 Tel: 248.375.7100
 Fax: 248.375.7101
 plantemoran.com

January 25, 2008

Ms. Cathy Nagy, FSA, MAAA
 Actuary
 Gabriel Roeder Smith & Company
 One Town Square
 Suite 800
 Southfield, MI 48706-3723

Re: Macomb County Employees Retirement System

Dear Ms. Nagy:

It was a pleasure meeting with Jim Koss and you earlier today. Pursuant to our meeting and discussions of the last quarter of 2007 and earlier this calendar year, this letter serves as an addendum to our correspondence of November 1, 2007 regarding Plante & Moran's request for information associated with a study we are performing for the county. This project was approved in its most recent form at a Budget Committee meeting this morning.

An important note is that only the General County and the Sheriff's Department participants are to be considered in any study; the Road Commission is not part of this analysis.

For the General County and the Sheriff's Department we are requesting your assistance in preparing twenty year projections of:

1. necessary contributions as a percent of payroll – both employer and employee contributions net of any adjustments for UAL as a level percent of payroll
2. payroll – by existing and future participants,
3. valuation assets
4. accrued liability and
5. funded percentage.

As a starting point, these projections are needed for each of the following scenarios:

Scenario	Annual Investment Return	New Entrants Permitted?	Actives Remain in Defined Benefit Plan?	Value Active Employee Individually Directed Option to Enroll in Defined Contribution Plan?	Hybrid Plan Consideration?
Baseline	7.50%	Yes	Yes	N/A	No
1	7.50%	No	Yes	N/A	No – new entrants defined contribution plan only
2	7.50%	Yes – hybrid only	Yes	N/A	Yes – 1.25% formula plus

Ms. Cathy Nagy
Re: Macomb County Michigan

January 25, 2008
Page 2

Scenario	Annual Investment Return	New Entrants Permitted?	Actives Remain in Defined Benefit Plan?	Value Active Employee Individually Directed Option to Enroll in Defined Contribution Plan?	Hybrid Plan Consideration?
					defined contribution plan
3	7.50%	Yes – hybrid only	Yes	N/A	Yes – 1.50% formula plus defined contribution plan
4	7.50%	Yes – hybrid only	Yes	N/A	Yes – 1.75% formula plus defined contribution plan

Unless otherwise revised in the above-referenced table, please make all actuarial assumptions, methods and plan provisions identical to those utilized in the most recent actuarial valuation for the Macomb County Employees Retirement System. Specifically, if the DROP and Rule of 70 are currently employed for the system General County and the Sheriff's Department participants, then these provisions should be used for all of the permutations requested.

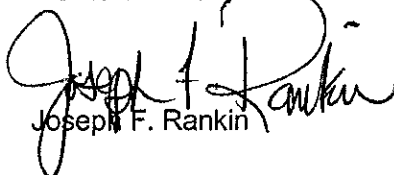
If these projections yield results that, in our opinion, do not reasonably represent emerging liabilities, we may request your assistance with additional calculations/projections. With that expectation, we would like an estimate from you on running additional calculations of the above-referenced scenarios based upon only a change in investment return.

Obviously, prior to proceeding with any consulting project for the county, you should have your fees approved by David M. Diegel, the Finance Director at Macomb County.

We understand that the information you provide to us is an estimate and as such, it will not be represented to have the same form and precision of a standard actuarial valuation. It is also understood that the permissibility of the permutations requested may be a matter of law, collective bargaining, or both – if the Board of Commissioners desire action to implement any of the alternatives represented in Plante & Moran's study, we will advise them to seek legal opinions prior to taking any such action. Finally, because of the interplay of the pension plan with the retiree health benefits provided by the county, we will recommend that the relative impact associated with the retiree medical plan be assessed prior to making any formal recommendations.

I will be in contact with you in the near future to discuss the timing of any reports you have been approved to prepare.

Very truly yours,
Plante & Moran, PLLC


Joseph F. Rankin

cc: Mr. David M. Diegel – Macomb County

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1 - 26 YOS	1.25%
Current Years of Service	30	27+ YOS	1.00%
FAC	\$46,541	Max Benefit (65% FAC)	\$30,251
Current Age	62	Profit Sharing	0%
		Investment Return	7.50%

			Compensation	Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan
1979	29	Years Ago	\$12,147		
1980	28	Years Ago	\$12,755		
1981	27	Years Ago	\$13,392		
1982	26	Years Ago	\$14,062		
1983	25	Years Ago	\$14,765		
1984	24	Years Ago	\$15,503		
1985	23	Years Ago	\$16,279		
1986	22	Years Ago	\$17,092		
1987	21	Years Ago	\$17,947		
1988	20	Years Ago	\$18,844		
1989	19	Years Ago	\$19,787		
1990	18	Years Ago	\$20,776		
1991	17	Years Ago	\$21,815		
1992	16	Years Ago	\$22,906		
1993	15	Years Ago	\$24,051		
1994	14	Years Ago	\$25,253		
1995	13	Years Ago	\$26,516		
1996	12	Years Ago	\$27,842		
1997	11	Years Ago	\$29,234		
1998	10	Years Ago	\$30,696		
1999	9	Years Ago	\$32,230		
2000	8	Years Ago	\$33,842		
2001	7	Years Ago	\$35,534		
2002	6	Years Ago	\$37,311		
2003	5	Years Ago	\$39,176		
2004	4	Years Ago	\$41,135		
2005	3	Years Ago	\$43,192		
2006	2	Years Ago	\$45,351		
2007	1	Years Ago	\$47,619		
2008		Current Year	\$50,000	\$16,987	\$0
				Annual Life Annuity	Account Balance
				\$1,416	
				Monthly Life Annuity	
			Age 62 Immediate Annuity Factor*	10.1668	1.0000
			Present Value of Life Annuity @ Age 62	\$172,707	\$0
					\$172,707
					Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.25%DB-0%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1 - 26 YOS	1.50%
Current Years of Service	30	27+ YOS	1.00%
FAC	\$46,541	Max Benefit (65% FAC)	\$30,251
Current Age	62	Profit Sharing	0%
		Investment Return	7.50%

			Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan
Compensation				
1979	29 Years Ago	\$12,147		
1980	28 Years Ago	\$12,755		
1981	27 Years Ago	\$13,392		
1982	26 Years Ago	\$14,062		
1983	25 Years Ago	\$14,765		
1984	24 Years Ago	\$15,503		
1985	23 Years Ago	\$16,279		
1986	22 Years Ago	\$17,092		
1987	21 Years Ago	\$17,947		
1988	20 Years Ago	\$18,844		
1989	19 Years Ago	\$19,787		
1990	18 Years Ago	\$20,776		
1991	17 Years Ago	\$21,815		
1992	16 Years Ago	\$22,906		
1993	15 Years Ago	\$24,051		
1994	14 Years Ago	\$25,253		
1995	13 Years Ago	\$26,516		
1996	12 Years Ago	\$27,842		
1997	11 Years Ago	\$29,234		
1998	10 Years Ago	\$30,696		
1999	9 Years Ago	\$32,230		
2000	8 Years Ago	\$33,842		
2001	7 Years Ago	\$35,534		
2002	6 Years Ago	\$37,311		
2003	5 Years Ago	\$39,176		
2004	4 Years Ago	\$41,135		
2005	3 Years Ago	\$43,192		
2006	2 Years Ago	\$45,351		
2007	1 Years Ago	\$47,619		
2008	Current Year	\$50,000	\$20,012	\$0
			Annual Life Annuity	Account Balance
			\$1,668	
			Monthly Life Annuity	
Age 62 Immediate Annuity Factor*			10.1668	1.0000
Present Value of Life Annuity @ Age 62			\$203,463	\$0
				\$203,463
				Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.5%DB-0%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1 - 26 YOS	1.75%
Current Years of Service	30	27+ YOS	1.00%
FAC	\$46,541	Max Benefit (65% FAC)	\$30,251
Current Age	62	Profit Sharing	0%
		Investment Return	7.50%

			Compensation	Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan
1979	29	Years Ago	\$12,147		
1980	28	Years Ago	\$12,755		
1981	27	Years Ago	\$13,392		
1982	26	Years Ago	\$14,062		
1983	25	Years Ago	\$14,765		
1984	24	Years Ago	\$15,503		
1985	23	Years Ago	\$16,279		
1986	22	Years Ago	\$17,092		
1987	21	Years Ago	\$17,947		
1988	20	Years Ago	\$18,844		
1989	19	Years Ago	\$19,787		
1990	18	Years Ago	\$20,776		
1991	17	Years Ago	\$21,815		
1992	16	Years Ago	\$22,906		
1993	15	Years Ago	\$24,051		
1994	14	Years Ago	\$25,253		
1995	13	Years Ago	\$26,516		
1996	12	Years Ago	\$27,842		
1997	11	Years Ago	\$29,234		
1998	10	Years Ago	\$30,696		
1999	9	Years Ago	\$32,230		
2000	8	Years Ago	\$33,842		
2001	7	Years Ago	\$35,534		
2002	6	Years Ago	\$37,311		
2003	5	Years Ago	\$39,176		
2004	4	Years Ago	\$41,135		
2005	3	Years Ago	\$43,192		
2006	2	Years Ago	\$45,351		
2007	1	Years Ago	\$47,619		
2008		Current Year	\$50,000	\$23,038	\$0
				Annual Life Annuity	Account Balance
				\$1,920	
				Monthly Life Annuity	
			Age 62 Immediate Annuity Factor*	10.1668	1.0000
			Present Value of Life Annuity @ Age 62	\$234,219	\$0

\$234,219

*

Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.75%DB-0%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1st 26 Years	1.25%
		26 + YOS	1.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	3%
Current Age	62	Investment Return	7.50%

Compensation			Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan (EOY Balance)
1979	29 Years Ago	\$12,147		\$364
1980	28 Years Ago	\$12,755		\$774
1981	27 Years Ago	\$13,392		\$1,234
1982	26 Years Ago	\$14,062		\$1,749
1983	25 Years Ago	\$14,765		\$2,323
1984	24 Years Ago	\$15,503		\$2,962
1985	23 Years Ago	\$16,279		\$3,673
1986	22 Years Ago	\$17,092		\$4,461
1987	21 Years Ago	\$17,947		\$5,334
1988	20 Years Ago	\$18,844		\$6,299
1989	19 Years Ago	\$19,787		\$7,365
1990	18 Years Ago	\$20,776		\$8,541
1991	17 Years Ago	\$21,815		\$9,836
1992	16 Years Ago	\$22,906		\$11,261
1993	15 Years Ago	\$24,051		\$12,827
1994	14 Years Ago	\$25,253		\$14,546
1995	13 Years Ago	\$26,516		\$16,433
1996	12 Years Ago	\$27,842		\$18,501
1997	11 Years Ago	\$29,234		\$20,765
1998	10 Years Ago	\$30,696		\$23,243
1999	9 Years Ago	\$32,230		\$25,954
2000	8 Years Ago	\$33,842		\$28,915
2001	7 Years Ago	\$35,534		\$32,150
2002	6 Years Ago	\$37,311		\$35,681
2003	5 Years Ago	\$39,176		\$39,532
2004	4 Years Ago	\$41,135		\$43,731
2005	3 Years Ago	\$43,192		\$48,307
2006	2 Years Ago	\$45,351		\$53,290
2007	1 Years Ago	\$47,619		\$58,715
2008	Current Year	\$50,000	\$16,987	\$64,619
			Annual Life Annuity	Account Balance
			\$1,416	
			Monthly Life Annuity	
Age 62 Immediate Annuity Factor*			10.1668	1.0000
Present Value of Life Annuity @ Age 62			\$172,707	\$64,619

\$237,326

Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.25%DB-3%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1st 26 Years	1.25%
		26 + YOS	1.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	6%
Current Age	62	Investment Return	7.50%

			Compensation	Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan (EOY Balance)
1979	29	Years Ago	\$12,147		\$729
1980	28	Years Ago	\$12,755		\$1,549
1981	27	Years Ago	\$13,392		\$2,468
1982	26	Years Ago	\$14,062		\$3,497
1983	25	Years Ago	\$14,765		\$4,646
1984	24	Years Ago	\$15,503		\$5,924
1985	23	Years Ago	\$16,279		\$7,345
1986	22	Years Ago	\$17,092		\$8,922
1987	21	Years Ago	\$17,947		\$10,668
1988	20	Years Ago	\$18,844		\$12,598
1989	19	Years Ago	\$19,787		\$14,730
1990	18	Years Ago	\$20,776		\$17,082
1991	17	Years Ago	\$21,815		\$19,672
1992	16	Years Ago	\$22,906		\$22,521
1993	15	Years Ago	\$24,051		\$25,654
1994	14	Years Ago	\$25,253		\$29,093
1995	13	Years Ago	\$26,516		\$32,866
1996	12	Years Ago	\$27,842		\$37,001
1997	11	Years Ago	\$29,234		\$41,530
1998	10	Years Ago	\$30,696		\$46,487
1999	9	Years Ago	\$32,230		\$51,907
2000	8	Years Ago	\$33,842		\$57,831
2001	7	Years Ago	\$35,534		\$64,300
2002	6	Years Ago	\$37,311		\$71,361
2003	5	Years Ago	\$39,176		\$79,064
2004	4	Years Ago	\$41,135		\$87,462
2005	3	Years Ago	\$43,192		\$96,613
2006	2	Years Ago	\$45,351		\$106,580
2007	1	Years Ago	\$47,619		\$117,431
2008		Current Year	\$50,000	\$16,987	\$129,238
				Annual Life Annuity	Account Balance
				\$1,416	
				Monthly Life Annuity	
Age 62 Immediate Annuity Factor*				10.1668	1.0000
Present Value of Life Annuity @ Age 62				\$172,707	\$129,238

\$301,945

*

Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.25%DB-6%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1st 26 Years	1.50%
		26 + YOS	1.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	3%
Current Age	62	Investment Return	7.50%

			Compensation	Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan (EOY Balance)
1979	29	Years Ago	\$12,147		\$364
1980	28	Years Ago	\$12,755		\$774
1981	27	Years Ago	\$13,392		\$1,234
1982	26	Years Ago	\$14,062		\$1,749
1983	25	Years Ago	\$14,765		\$2,323
1984	24	Years Ago	\$15,503		\$2,962
1985	23	Years Ago	\$16,279		\$3,673
1986	22	Years Ago	\$17,092		\$4,461
1987	21	Years Ago	\$17,947		\$5,334
1988	20	Years Ago	\$18,844		\$6,299
1989	19	Years Ago	\$19,787		\$7,365
1990	18	Years Ago	\$20,776		\$8,541
1991	17	Years Ago	\$21,815		\$9,836
1992	16	Years Ago	\$22,906		\$11,261
1993	15	Years Ago	\$24,051		\$12,827
1994	14	Years Ago	\$25,253		\$14,546
1995	13	Years Ago	\$26,516		\$16,433
1996	12	Years Ago	\$27,842		\$18,501
1997	11	Years Ago	\$29,234		\$20,765
1998	10	Years Ago	\$30,696		\$23,243
1999	9	Years Ago	\$32,230		\$25,954
2000	8	Years Ago	\$33,842		\$28,915
2001	7	Years Ago	\$35,534		\$32,150
2002	6	Years Ago	\$37,311		\$35,681
2003	5	Years Ago	\$39,176		\$39,532
2004	4	Years Ago	\$41,135		\$43,731
2005	3	Years Ago	\$43,192		\$48,307
2006	2	Years Ago	\$45,351		\$53,290
2007	1	Years Ago	\$47,619		\$58,715
2008		Current Year	\$50,000	\$20,012	\$64,619
				Annual Life Annuity	Account Balance
				\$1,668	
				Monthly Life Annuity	
			Age 62 Immediate Annuity Factor*	10.1668	1.0000
			Present Value of Life Annuity @ Age 62	\$203,463	\$64,619

\$268,082

Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.5%DB-3%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1st 26 Years	1.50%
		26 + YOS	1.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	6%
Current Age	62	Investment Return	7.50%

Compensation			Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan (EOY Balance)
1979	29 Years Ago	\$12,147		\$729
1980	28 Years Ago	\$12,755		\$1,549
1981	27 Years Ago	\$13,392		\$2,468
1982	26 Years Ago	\$14,062		\$3,497
1983	25 Years Ago	\$14,765		\$4,646
1984	24 Years Ago	\$15,503		\$5,924
1985	23 Years Ago	\$16,279		\$7,345
1986	22 Years Ago	\$17,092		\$8,922
1987	21 Years Ago	\$17,947		\$10,668
1988	20 Years Ago	\$18,844		\$12,598
1989	19 Years Ago	\$19,787		\$14,730
1990	18 Years Ago	\$20,776		\$17,082
1991	17 Years Ago	\$21,815		\$19,672
1992	16 Years Ago	\$22,906		\$22,521
1993	15 Years Ago	\$24,051		\$25,654
1994	14 Years Ago	\$25,253		\$29,093
1995	13 Years Ago	\$26,516		\$32,866
1996	12 Years Ago	\$27,842		\$37,001
1997	11 Years Ago	\$29,234		\$41,530
1998	10 Years Ago	\$30,696		\$46,487
1999	9 Years Ago	\$32,230		\$51,907
2000	8 Years Ago	\$33,842		\$57,831
2001	7 Years Ago	\$35,534		\$64,300
2002	6 Years Ago	\$37,311		\$71,361
2003	5 Years Ago	\$39,176		\$79,064
2004	4 Years Ago	\$41,135		\$87,462
2005	3 Years Ago	\$43,192		\$96,613
2006	2 Years Ago	\$45,351		\$106,580
2007	1 Years Ago	\$47,619		\$117,431
2008	Current Year	\$50,000	\$20,012	\$129,238
			Annual Life Annuity	Account Balance
			\$1,668	
			Monthly Life Annuity	
Age 62 Immediate Annuity Factor*			10.1668	1.0000
Present Value of Life Annuity @ Age 62			\$203,463	\$129,238

\$332,701

Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.5%DB-6%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1st 26 Years	1.75%
		26 + YOS	1.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	3%
Current Age	62	Investment Return	7.50%

			Accrued Annual Pension Benefit (Subject to max)	Defined Contribution Plan (EOY Balance)
Compensation				
1979	29 Years Ago	\$12,147		\$364
1980	28 Years Ago	\$12,755		\$774
1981	27 Years Ago	\$13,392		\$1,234
1982	26 Years Ago	\$14,062		\$1,749
1983	25 Years Ago	\$14,765		\$2,323
1984	24 Years Ago	\$15,503		\$2,962
1985	23 Years Ago	\$16,279		\$3,673
1986	22 Years Ago	\$17,092		\$4,461
1987	21 Years Ago	\$17,947		\$5,334
1988	20 Years Ago	\$18,844		\$6,299
1989	19 Years Ago	\$19,787		\$7,365
1990	18 Years Ago	\$20,776		\$8,541
1991	17 Years Ago	\$21,815		\$9,836
1992	16 Years Ago	\$22,906		\$11,261
1993	15 Years Ago	\$24,051		\$12,827
1994	14 Years Ago	\$25,253		\$14,546
1995	13 Years Ago	\$26,516		\$16,433
1996	12 Years Ago	\$27,842		\$18,501
1997	11 Years Ago	\$29,234		\$20,765
1998	10 Years Ago	\$30,696		\$23,243
1999	9 Years Ago	\$32,230		\$25,954
2000	8 Years Ago	\$33,842		\$28,915
2001	7 Years Ago	\$35,534		\$32,150
2002	6 Years Ago	\$37,311		\$35,681
2003	5 Years Ago	\$39,176		\$39,532
2004	4 Years Ago	\$41,135		\$43,731
2005	3 Years Ago	\$43,192		\$48,307
2006	2 Years Ago	\$45,351		\$53,290
2007	1 Years Ago	\$47,619		\$58,715
2008	Current Year	\$50,000	\$23,038	\$64,619
			Annual Life Annuity	Account Balance
			\$1,920	
			Monthly Life Annuity	
Age 62 Immediate Annuity Factor*			10.1668	1.0000
Present Value of Life Annuity @ Age 62			\$234,219	\$64,619
				\$298,838
				Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.75%DB-3%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	1st 26 Years	1.75%
		26 + YOS	1.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	6%
Current Age	62	Investment Return	7.50%

			Compensation	Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan (EOY Balance)
1979	29	Years Ago	\$12,147		\$729
1980	28	Years Ago	\$12,755		\$1,549
1981	27	Years Ago	\$13,392		\$2,468
1982	26	Years Ago	\$14,062		\$3,497
1983	25	Years Ago	\$14,765		\$4,646
1984	24	Years Ago	\$15,503		\$5,924
1985	23	Years Ago	\$16,279		\$7,345
1986	22	Years Ago	\$17,092		\$8,922
1987	21	Years Ago	\$17,947		\$10,668
1988	20	Years Ago	\$18,844		\$12,598
1989	19	Years Ago	\$19,787		\$14,730
1990	18	Years Ago	\$20,776		\$17,082
1991	17	Years Ago	\$21,815		\$19,672
1992	16	Years Ago	\$22,906		\$22,521
1993	15	Years Ago	\$24,051		\$25,654
1994	14	Years Ago	\$25,253		\$29,093
1995	13	Years Ago	\$26,516		\$32,866
1996	12	Years Ago	\$27,842		\$37,001
1997	11	Years Ago	\$29,234		\$41,530
1998	10	Years Ago	\$30,696		\$46,487
1999	9	Years Ago	\$32,230		\$51,907
2000	8	Years Ago	\$33,842		\$57,831
2001	7	Years Ago	\$35,534		\$64,300
2002	6	Years Ago	\$37,311		\$71,361
2003	5	Years Ago	\$39,176		\$79,064
2004	4	Years Ago	\$41,135		\$87,462
2005	3	Years Ago	\$43,192		\$96,613
2006	2	Years Ago	\$45,351		\$106,580
2007	1	Years Ago	\$47,619		\$117,431
2008		Current Year	\$50,000	\$23,038	\$129,238
				Annual Life Annuity	Account Balance
				\$1,920	
				Monthly Life Annuity	
			Age 62 Immediate Annuity Factor*	10.1668	1.0000
			Present Value of Life Annuity @ Age 62	\$234,219	\$129,238

\$363,457

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Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

1.75%DB-6%DC

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	All YOS	0.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	3%
Current Age	62	Investment Return	7.50%

			Compensation	Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan (EOY Balance)
1979	29	Years Ago	\$12,147		\$364
1980	28	Years Ago	\$12,755		\$774
1981	27	Years Ago	\$13,392		\$1,234
1982	26	Years Ago	\$14,062		\$1,749
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1984	24	Years Ago	\$15,503		\$2,962
1985	23	Years Ago	\$16,279		\$3,673
1986	22	Years Ago	\$17,092		\$4,461
1987	21	Years Ago	\$17,947		\$5,334
1988	20	Years Ago	\$18,844		\$6,299
1989	19	Years Ago	\$19,787		\$7,365
1990	18	Years Ago	\$20,776		\$8,541
1991	17	Years Ago	\$21,815		\$9,836
1992	16	Years Ago	\$22,906		\$11,261
1993	15	Years Ago	\$24,051		\$12,827
1994	14	Years Ago	\$25,253		\$14,546
1995	13	Years Ago	\$26,516		\$16,433
1996	12	Years Ago	\$27,842		\$18,501
1997	11	Years Ago	\$29,234		\$20,765
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1999	9	Years Ago	\$32,230		\$25,954
2000	8	Years Ago	\$33,842		\$28,915
2001	7	Years Ago	\$35,534		\$32,150
2002	6	Years Ago	\$37,311		\$35,681
2003	5	Years Ago	\$39,176		\$39,532
2004	4	Years Ago	\$41,135		\$43,731
2005	3	Years Ago	\$43,192		\$48,307
2006	2	Years Ago	\$45,351		\$53,290
2007	1	Years Ago	\$47,619		\$58,715
2008		Current Year	\$50,000	\$0	\$64,619
				Annual Life Annuity	Account Balance
				\$0	
				Monthly Life Annuity	
				10.1668	1.0000
				Age 62 Immediate Annuity Factor*	
				Present Value of Life Annuity @ Age 62	\$0
					\$64,619

\$64,619

Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

3%DC Only

Macomb County

Assumptions - GENERAL COUNTY			
Wage Increases	5%	DB Benefit:	
Current Wages	\$50,000	All YOS	0.00%
Current Years of Service	30	Max Benefit (65% FAC)	\$30,251
FAC	\$46,541	Profit Sharing	6%
Current Age	62	Investment Return	7.50%

			Compensation	Accrued Annual Pension Benefit (subject to max)	Defined Contribution Plan (EOY Balance)
1979	29	Years Ago	\$12,147		\$729
1980	28	Years Ago	\$12,755		\$1,549
1981	27	Years Ago	\$13,392		\$2,468
1982	26	Years Ago	\$14,062		\$3,497
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1984	24	Years Ago	\$15,503		\$5,924
1985	23	Years Ago	\$16,279		\$7,345
1986	22	Years Ago	\$17,092		\$8,922
1987	21	Years Ago	\$17,947		\$10,668
1988	20	Years Ago	\$18,844		\$12,598
1989	19	Years Ago	\$19,787		\$14,730
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1992	16	Years Ago	\$22,906		\$22,521
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1994	14	Years Ago	\$25,253		\$29,093
1995	13	Years Ago	\$26,516		\$32,866
1996	12	Years Ago	\$27,842		\$37,001
1997	11	Years Ago	\$29,234		\$41,530
1998	10	Years Ago	\$30,696		\$46,487
1999	9	Years Ago	\$32,230		\$51,907
2000	8	Years Ago	\$33,842		\$57,831
2001	7	Years Ago	\$35,534		\$64,300
2002	6	Years Ago	\$37,311		\$71,361
2003	5	Years Ago	\$39,176		\$79,064
2004	4	Years Ago	\$41,135		\$87,462
2005	3	Years Ago	\$43,192		\$96,613
2006	2	Years Ago	\$45,351		\$106,580
2007	1	Years Ago	\$47,619		\$117,431
2008		Current Year	\$50,000	\$0	\$129,238
				Annual Life Annuity	Account Balance
				\$0	
				Monthly Life Annuity	
Age 62 Immediate Annuity Factor*				10.1668	1.0000
Present Value of Life Annuity @ Age 62				\$0	\$129,238

\$129,238

Total

*Age 62 RP 2000 Blended Sex Mortality, no setback, 7.5% (per p. D-3 of valuation)

6%DC Only